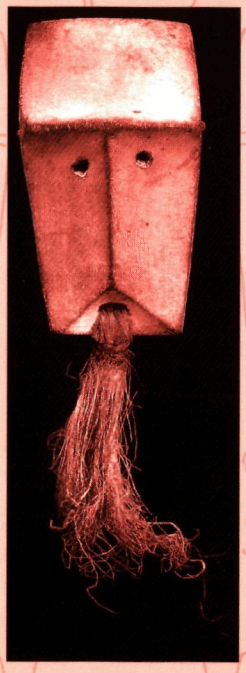
Practice visits

Assessing and improving management in general practice

Pieter van den Hombergh



IPIC= Identify priorities; Plan; Implement; Check

VIP= Visit Instument to assess Practice management

Omslag

Lukwakongo masker. Lega, Pangi, Kivu, Kongo Kinshasa

Het masker is het embleem van een lid van de hogere graad van het Bwami-genootschap, de 'kongabulumba' graad. Met deze graad manifesteert het lid zich vaak als leermeester of mentor (nsingia). Het masker wordt op het laagste niveau van de initiatie voor het gezicht gedragen en het is de bedoeling dat het masker de externe identiteit van een persoon transformeert om aldus iets van zijn innerlijk te weerspiegelen. De gebruikscontext verwijst in hoofdzaak naar een persoon wiens hinderlijke of ongeoorloofde gedrag ontwrichtend werkt. Op directe of indirecte wijze geeft de bijbehorende uitleg de correcte houdingen aan die de sociale harmonie binnen de groep dienen te verzekeren. D. *Biebuyck*

Cover

Lukwakongo mask. Lega, Pangi, Kivu, Kongo Kinshasa

The mask is the emblem of a high classed member of the Bwami society, the 'kongabulumba' degree. With this degree a member would present himself as a teacher (nsingia) or tutor. The mask is worn at the lowest level of the initiation for the Bwami-society and is meant to transform the external identity of the initiated member to reflect some of his inner life. Directly or indirectly the concomitant explanation indicates the correct behaviour necessary to warrant social harmony. D. *Biebuyck*

PRACTICE VISITS
ASSESSING AND IMPROVING MANAGEMENT IN GENERAL PRACTICE

PIETER VAN DEN HOMBERGH

The studies presented in this thesis were performed at the Centre for Quality of Care Research of the University of Nijmegen and the University of Maastricht, which participates in the Netherlands School of Primary Care Research (CaRe), acknowledged in 1995 by the Royal Dutch Academy of Science (KNAW)

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PRACTICE VISITS

Assessing and improving management in general practice

een wetenschappelijke proeve op het gebied van de Medische Wetenschappen

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CONTENT

INTRODUCTION

This thesis concerns general practice care and specifically the quality of general practice management and organization The profession of General Practice in the Netherlands increasingly employs strategies known as quality assurance or quality improvement [1 2] in line with similar developments abroad In policy documents [3 4] of the professional organizations [A] concerning the quality of care, the availability of facts or data for evaluation of the care provided by GP and practice is crucial To evaluate the competence and performance of general practitioners and the quality of care of their practice a variety of instruments has been developed in the Netherlands [5 6 7] In addition to instruments for assessing clinical performance and competence, medical knowledge and communicative and technical skills, the development of an instrument to assess the structural aspects of general practice would be most welcome [8] Structure concerns the physical features of health care [9] and structural aspects are amongst others the premises, the equipment, the personnel, other care providers, the primary health care environment, the organization of the services, the administration and documentation [9] as well as the system for quality improvement [8]

QUALITY ASSURANCE IN GENERAL PRACTICE AND PRACTICE MANAGEMENT

The Working Party on Quality Assurance (WONCA) defines 'Quality Assurance" as a process of planned activities which includes performance review and enhancement with the aim of continually improving standards of patient care [10] In the Netherlands this performance review and enhancement would concern firstly the functions and tasks of the Dutch GP as described in the "Basic Job Description" of the LHV [11] In the determination of performance the assessment of actual care against the guidelines of the NHG is also pivotal [12]

By improving post graduate training, by extension of the vocational training period and by obligatory reaccreditation the profession has set important steps in stimulating quality improvement [13] Optimizing practice management would be an additional opportunity for improvement, a chance not to be missed On the spot assessment using data collected at its source - the GP and the practice - would attribute to this improvement, requiring the development of a practice visit method to assess practice management Just like any other assessment method, such a tool should be 'valid, feasible, acceptable to the profession and of proved reliability' [14] The Dutch College of General Practitioners and the Centre for Quality of Care Research jointly embarked on a project to develop and validate such a method

[A] LHV (National Society of General Practitioners) and NHG (Dutch College of General Practitioners)

The project's goal was to develop and evaluate a valid, reliable, feasible and acceptable method to assess the management and organization of a practice and its GP(s)

In this introduction we focus on the relevance of the development of such a method and the analysis of the literature This will result in research questions and a study design

RELEVANCE OF ASSESSMENT AND QUALITY IMPROVEMENT OF PRACTICE MANAGEMENT

In the process of assuring and improving the quality of care data collection and assessment of actual care are essential steps [15] Care not only refers to patient care but also to those aspects, that are conditional for good professional care [11] These supporting duties - the organization of the practice, the organization of preventive activities, collaboration with all relevant care providers and subordinate staff attending chronic and elderly patients provision of information documentation and organization of the quality assurance - demand an optimal and flexible practice organization [16]

Additional preconditions for good practice management are the service, the politeness of the staff the punctuality, and other attitudinal aspects It goes without saying that the patient will take the practice organization and the management of the GP(s) into account when judging the quality of care [17] Analysis of mistakes and incidents in a practice can be linked to inappropriate communication or practice management in the majority of cases [18 19]

Not only patients but also other care providers (hospitals home care, physiotherapy, etc) and third parties (authorities, schools) are directly dependent for their work on the management of the GP and the practice Insufficient management skills of the GP proved to be an obstacle for implementing more extensive home care [20] and for taking up preventive tasks [21 22] Practice management is not a gift, but can be improved through education and training [23 24] This void is yet underestimated in vocational training of GPs and Pringle's[25] cynical comment on the matter is perfectly clear 'A medical degree appears to confer on a person a God given ability to manage' Even after registration as a GP practice management is often still the poor cousin in the GP s priorities Time is preferably spent on patients and practice management is left for potential spare time, a rare commodity in general practice [26] Deming [27] stated that 85% of possible improvements in outcome is to be found in improving the organization instead of increasing expertise of the employees The importance of assessing and improving the organization hardly needs any further argumentation [28]

Assessment presupposes accepted guidelines or criteria [3], but these are hardly available

for practice management Marinker [17] laments "The relative ease with which "structure" can be measured is balanced by the relative difficulty - I would rather say near impossibility - of making other than value judgements about them' On the other hand he argues that value judgements can be made without too much embarrassment (cramped consulting room, outdated sterilizer etc) When we have a look at strategies used in trade and industry, a "SWOT analysis" of Strong and Weak points, of Opportunities and Threats [29] is frequently used to improve quality and competitive edge [18] If a strict assessment using guidelines and criteria is not possible for quality improvement, one could resort to the strategy of a SWOT or comparable analysis, in which an individual GP or practice is compared to other GPs and practices and GPs are helped to critically evaluate the strengths and weaknesses in their own management

When colleagues or a practice itself initiates assessment of quality it is called internal quality improvement, external quality improvement being executed by for example external institutions, insurers or government [8] The choice in our project was for internal quality improvement with a "formative" assessment method Formative assessment has an educational function and determines the progress that has been achieved in meeting the learning objectives and identifies what remains to be learned in the future It is distinguished from "summative assessment that is used to determine individuals' competence in order to decide whether they can continue to practice, whether or not they are fit to proceed from one stage of training to the next and, at the end of the training to assess whether or not they have acquired the attributes for independent practice [30]

WHAT IS KNOWN ABOUT QUALITY AND ASSESSMENT OF PRACTICE MANAGEMENT?

We analysed the Dutch and international literature concerning practice management and organization viewed from the angle of different research questions Because 'practice management and its equivalents in different countries and languages lack precise boundaries and exact filling in, an attempt to order and concretize aspects of care being part of the domain of practice management would be a necessary first step to determine the domain for assessment This led to the first question

1. ***What could be considered the domain of practice management and how could the concept be defined?***

In order to develop an assessment method for practice management the analysis of the literature was also focused on answering two additional questions

2. ***What aspects (or items) of practice management should be assessed and what is known about methods and procedures for assessment and giving feedback?***
3. ***What is known about differences between GPs and practices in practice management and about factors determining these differences?***

A search in Medline (1986-1996) was carried out using the keywords 'General practice', 'Family practice', 'Practice management', in combination with 'Quality assurance', 'Organization',' Audit and 'Assessment' We looked for publications on practice visits in the Netherlands [31] [32] and in other countries, that made a start with the assessment of structural aspects of care [10] [33] [34] [35] In addition we looked manually through 12 journals [B] as far back as 1988 In case of a relevant publication we also checked the quoted literature (snowball-method) We collected publications which contained relevant criteria and guidelines for assessment as well as assessment methods that included aspects of practice management

THE STUDY OF THE LITERATURE ON ASSESSMENT OF PRACTICE MANAGEMENT

A Medline search hardly yielded any relevant publications Manual search only resulted in publications that concerned assessment of care in general (mainly behaviour in consultation, prevention, clinical competence) practice management only receiving indirect attention as a prerequisite for quality of care Assessment was focused predominantly on process and outcome rather than practice management Donabedian introduced this tripartition - structure, process, outcome - and his 'structural audit' is comparable with 'assessment of practice management ' in the Netherlands We will first summarize our findings on the different concepts for practice management and related expressions in the Dutch and international literature In the second paragraph our findings on the content and the procedure of existing assessment methods will be summarized and in the third our findings on variation in practice management

§ 1. DIFFERENT CONCEPTS FOR PRACTICE MANAGEMENT

The consultation - the occasion when a patient seeks the advice of a doctor whom he trusts - remains the focus of general practice and the purpose of practice management is

[B] British Journal of General Practice
British Medical Journal
Canadian Family Physician
Huisarts en Wetenschap
Journal of Family Practice
Journal of the Royal College of General Practitioners
Kwaliteit & Zorg
Medisch Contact
Quality Assurance in Health Care
Quality Management in Health Care
Quality in Health Care
Scandinavian Journal of Primary Health Care

to promote the quality of that consultation [36]. This may seem obvious, but our first concern was to find out if the concept for practice management was comparable in different countries.

The Dutch literature

Dutch (and Flemish) GPs use one concept -Praktijkvoering- for all activities that in the Anglo-Saxon literature are covered by the concepts 'practice management' [37], 'management in general practice' [38], 'organization in general practice' [17] and to some lesser extent by 'structural aspects of care' [39]. The Dutch concept 'Praktijkvoering' has a long tradition [40] and from the start of the Dutch College for General Practitioners a special committee specifically considered 'praktijkvoering' its domain. That committee had the task to support GPs and attribute to "those aspects of general practice that next to aspects of care are conditional for the quality of patient care".

Various attempts were made to get around the word 'praktijkvoering' [41]. In the 'Job description for the GP' of the LHV [11] the word was avoided using "preconditions for good care" instead. Sprij [42] made an inventory of the managerial tasks of the GP trying to set these apart from other structural aspects. The attempts, however, to replace the concept 'Praktijkvoering' for a more useful or clearer concept have been unsuccessful. The concept 'Praktijkvoering' is concise and refers to all aspects necessary for providing good (clinical) care, to both management and organization encompassing structural as well as process aspects. The special department of the Dutch College for 'praktijkvoering' - next to a department for the development of clinical guidelines and for material for CME [C] - indicates the clear position the concept acquired in the profession. This department supports the GP with special equipment, models and (technical) information in order to standardize the management of the practice [3]. For practical reasons we assume in this study that the concept of 'practice management' is the equivalent of the Dutch concept 'Praktijkvoering', including practice organization.

The international literature

The assessment method developed by the Royal College of General Practitioners "What sort of Doctor" [43] presents different aspects of 'practice management' under the headings 'Professional values', 'Accessibility' and 'Communication'. The concept 'Structure' is defined as 'Physical and personnel resources of an organization'. The word structure is, how-

[C] Continuous Medical Education

ever, not part of the GP's vocabulary and is confined to management vernacular
The WHO [24] uses the concept 'Good management' in guiding her member states to reach the social target "Health for all by the year 2000" and stresses that good management is to an organization what health is to the body the smooth efficient functioning of all its parts "Good management highlights priorities adapts the service to the needs of a changing situation, makes the most of limited resource, improves the standard and quality of service and maintains high staff morale Good health management means good health care " [24] It may be obvious that what 'good health management' means in terms of premises, equipment, tasks etc partly depends on the health policy and (financial) means of a country

Spanish and French speaking countries use the words 'gestiòn de pràctica clinica' and 'gestion des soins de santé' respectively These words cover a wider domain than 'praktijkvoering' or practice management and also cover tasks like youth health care, community care and sanitation In Portugal Ramos [44] published twelve articles under the heading 'Gestão da Prática clínica' covering aspects as service teamwork, community health care, organization of prevention, quality management and time management Recent publications from various European countries indicate that the domain of practice management is made increasingly explicit

Marinker spends one confined chapter on 'auditing the organisation in his book "Medical audit and general practice" [17] The aspects for audit in the organization he addresses are 'management styles, meetings, workload, access, acceptability, complaints, patient satisfaction, effectiveness and efficiency, staff, staff appraisal, buildings, equipment and records [45] This enumeration hasn t been challenged in more recent publications, but was also never delineated, acknowledged or endorsed by the profession as the domain to be assessed

Not surprisingly we could not find an exact and detailed description of the domain of practice management or an attempt to define its boundaries based on broad consensus that would serve our purpose in the national or international literature On the other hand we found a promising consensus on what aspects are conditional for good quality of care helpful for our first step of determination of the domain for audit

§ 2. EXPERIENCES WITH EXISTING ASSESSMENT METHODS AND THEIR CONTENT

On a practice visit as the assessment method of choice the first working party of "What Sort of Doctor" states "Hitherto the conventional approach had been to assemble the basic ingredients of knowledge skills and attitudes deemed necessary for a doctor's work

and then to draw up assessment techniques appropriate to each of these elements. But it was precisely this procedure, which had been found wanting when applied to the complex nature of general practice and which had stimulated the search for a more satisfactory alternative." [43] Assessment in a practice visit was unanimously picked as the most obvious, appealing, valid and feasible alternative to obtain actual data on performance and quality of care. We looked for publications of experiences with assessment in practice visits in national and international literature.

The Netherlands

In the Netherlands an educational method to assess practice management in mutual visits was promoted as early as 1966 by Bergsma [31]. It was one of the first attempts to introduce peer review. A list of items was used as a guide for the visit and the procedure was further formalized by the Dutch College [32], but the method was never evaluated and fell into disuse. In the eighties "peer review" was stimulated as a powerful tool for audit and several methods had been worked out in detail. One method was peer practice observation or the observation of each other's practice and was recommended as a learning process for both the observing colleague (self audit of one's own practice) and the auditee. The method comprised inspection of premises and equipment, chart audit and attending surgery and home visits. In 1983 at the Member's Congress of the College the Audit Committee presented a proposal for the instigation of peer review by means of practice observation in groups with a maximum of eight colleagues. Grol evaluated peer review in GP-groups [46], where observation of the practice only played a marginal role in an audit process dominated by clinical performance assessment. The audit methods were hampered by the lack of guidelines and criteria. The participating GPs used the emerging guidelines in the profession, but mostly reflected critically through the process of comparison upon performance and the way colleagues ran their practice. Peer review proved to bring on considerable change, but the contribution of the pratice visit to this change was not evaluated separately. The items in these instruments were an early reflection of relevant indicators in the domain of practice management [47] and preceded the first concise guidelines for Dutch GPs [11]. Peculiarly - for political reasons - guidelines on the 'basic equipment and practice arrangements' were never published.

An inventory almost identical to the one used by Marinker for auditing the organization was proposed by Van Es as the domain of 'Praktijkvoering' in his description of the context

for vocational training, a very early attempt (1983) to define general practice [48]

At the end of the eighties the Dutch College started to publish the first national guidelines [13] for clinical care and practice management These guidelines are based on an analysis of the scientific literature and clinical expertise, guidelines with a broad preferably national, legitimacy Four guidelines addressed aspects of practice management 'Accessibility/availability" [49], "The referral letter" [50], ' Medical documentation" [51] [52], "Obstetric equipment and preconditions' [53] The clinical guidelines of the Dutch College also provide recommendations for practice management, but these are mostly implicit (e g Sphygnomanometer, otoscope or glucometer) Other recommendations on practice management can be found in a series called 'Building stones for practice management They miss the solid foundation of the College guidelines, but provide the GP with practical information and advice on subjects like equipment, the doctor s bag and recommended vials, disinfection and sterilization, the practice leaflet band aid, audiometry and proctology [54] [55] [56] [57] [58]

A practice visit method requiring two observers/assessors has been used by the Dutch GP-training institutes to select trainers It served as a treshold to prevent that GPs applying for trainership join with insufficient practice management and quality of care The method only assesses a number of basic entry guidelines for trainership and was never validated nor evaluated

The Dutch Health Council recommends the extension of assessment visits to a regular activity for all practicing doctors [59] The objectives in the assessment visit should be predominantly educational but a summative assessment visit is not excluded as part of future registration of consultants [60] Selection has not yet been considered, since the reliability, validity and acceptability of the methods await testing

The surgeons gynaecologists, pediatricians and radiologists through their representing Colleges [61] and supported by a professional organization [60] [62], took a lead in doing systematic visits of training departments and later of all respective specialty departments in hospitals [63] [64] In 1996 all scientific colleges of clinical specialties had operational assessment visit programs [65] and from 1-1-1996 registration is linked to participation in the program [66] Specialists assess mainly the activities in the department, necessary for quality improvement and assurance The visiting committee has 2-3 surveyors (colleagues) and the visit requires 0 5 - 1 day Structured interviews with different sections in the hospital - sometimes representatives of local GPs - are instruments for data collection Reported problems were the scanty time planned for the interviews, the total time invested (350 hours

for 10 visits not including travel and preparation time) and the representativity of the interviewed GP [61]. The Dutch surgeons reported considerable change in a follow-up visit one year after the first visit, but the study missed a control and the follow-up consisted of a questionnaire only [63].

Also nursing homes have external visits with methods developed by their representing body [67], but their approach is less relevant for our study, because they address the process of an institution, rather different from a general practice. The experiences outside general practice may not be all that relevant for the development of a practice visit method for GPs. All these institutions use visits for assessment and these assessment visits - with emphasis predominantly on structural aspects of care, rather than outcome - seem to be generally accepted by professionals for quality improvement purposes.

Other countries

Worldwide mainly Anglo-Saxon countries have developed a number of practice visit methods to assess the quality of general practice care. Practice management invariably is part of the assessment. The visit is always voluntary and usually the first visits involved GP-trainers. In the UK successful completion of the practice visit method "Fellowship by assessment" was a way to become a fellow of the RCGP as an alternative of doing the FRCGP-exams. The method mentions 67 criteria, half of which are concerned with practice management, mainly accessibility and availability. Beforehand an application form has to be submitted asking for practice characteristics, and for outcome data on referrals and prescriptions, as well as videotapes on 12 consultations. The practice is visited by three surveyors, one of them writing a final report. A patient questionnaire will be a future extension of the method.

The Canadian College of Family Practitioners developed a program of office visits using peer review to identify physicians judged seriously deficient in charting or competence (about 10%) [68]. These 10% were given 6 months to improve, after which a second office assessment by peers was conducted. About half of those remaining, still had significant problems and were recommended for a PREP (Physician REview Program), the second diagnostic component in the assessment [69, 70, 71]. The PREP is as yet a recommendation, but should become legally compulsary in the future. The validity and reliability of the PREP are known, but not of the office visit. A questionnaire for the GP and a patient survey were part of the method. The program could discriminate between referred physicians and a reference group.

In New Zealand [72] practice visits are used for the selection of GP-trainers They agreed on 37 criteria for their assessment, judged by a team of colleagues in the practice visit

In 1996 the RACGP in Australia published her Entry Guidelines [35], fifteen guidelines grouped into five main areas with a total of 200 indicators describing the quality of practice activities and facilities required for accreditation The assessment is a survey visit by two peer surveyors and involves 'not only structure process and outcome but also the ethical base on which practice management is founded' [73] They look at practice services, rights and needs of patients, quality assurance activities and education, practice administration, and physical factors It takes four hours for a solo practice and 5-6 hours for a larger practice In the field test, involving 738 GPs in 199 practices [74], 55% would have been accredited Of the practices that would not have been accredited, over 75% met all but one or two criteria, mostly being ' vaccine storage' and 'contaminated waste disposal These practices would have been accredited with minimal improvement The number of practices that have presently been refused accreditation is unknown The judgement of the criteria depends considerably on the opinion of the surveyor(s) potentially jeopardizing acceptance

Entry standards in the Australian project were concluded to be successful in excluding 'bad practices There was a positive association between the surveyor s global judgement (good vs bad) and each practice's performance on the essential criteria No practice would have been accredited, considered bad by global judgement The correlation between surveyors on each criterion was very high and the practice visit method was concluded to be valid and reliable The standards were acceptable (58 out of 65 criteria were rated 'acceptable in over 80% by the participating GPs) and achievable (50 out of 65 criteria were rated 'achievable' in over 80% by the participating GPs) The cost per practice visit is Australian $ 2,057 - The minimum standards will be followed by optimal standards in two years time

Tasmania runs a special interpractice visit pilot study with purely educational objectives involving consultation skills and assessment against Australian practice standards for chronic conditions [personal communication, Gill]

Iceland stands out for having a specific standard for premises and equipment [75]

Though the UK Canada and Australia are on the verge of giving 'assessment by practice visit' a major role in their program for QI and reaccreditation their methods differ and are still evolving Their practice visit methods have the ambition to assess quality of care in total, but often deal mainly with aspects of practice management, simply because these

can be assessed with some accuracy None of these methods was intended to be purely educational and all have or will have both formative and summative objectives now or in the future Whether the benefits outweigh the efforts and stress of a visit is yet unclear

The practice visit methods also differ in what aspects need to be assessed at which level - the practice level or the level of the individual GP -, to what extent and with what procedure

Procedures for assessment of practice management and giving feedback

Assessment in a practice visit not only concerns the definition of the areas of performance and setting criteria but also involves the procedures for data collection and presentation of the results as well as the procedure for giving feedback to the GP or practice Who should do what sort of practice visit and give what sort of feedback is virtually unknown The way feedback is given is probably quintessential for success in terms of QI Though it was difficult to find a single study on (the effectiveness of) giving feedback on quality of care in a practice visit let alone of practice management, there were quite a few publications on interventions for improving quality of care in general practice [76] [77]

In earlier studies feedback to the GP of objective data on clinical competence and performance proved to be more effective than CME [78] A combination of information transfer and learning through social influence and management supported strategies -both interventions being part of a practice visit - proved to be effective in most situations [79] [80], although the only randomized controlled trial on this combination showed a weak effect [81]

In a study on the effectivity of visits by peers of Dutch surgeon s departments assessment against guidelines resulted in considerable change but the study missed a control and the follow-up after a year consisted of a questionnaire only [63]

In a systematic review of rigorous evaluations on the effect of clinical guidelines on medical practice [82] Grimshaw and Russell conclude that introduction of guidelines resulted in significant improvements in the process of care in all but 4 out of 27 studies, and in all but 2 out of 11 studies assessing the outcome of care They concluded that the most effective strategy for change was a patient-specific reminder at the time of consultation [82] If this strategy holds true for a 'practice or GP specific reminder on the spot - i e feedback in a practice visit - this yet remains to be proved

Grol studied the effects of participating in a small group peer review program [46] After 1,5 years and about 15 sessions there was significant and substantial change in both medical

and non medical performance compared to previous scores of the same GPs and to the control However next to advantages, he mentions possible drawbacks of peer review A colleague giving feedback could be knowledgeable, committed, supportive constructive and understanding, all needed for awareness and change [46], but could also be opinated and thinking in solutions, stereotypes and truisms [47]

The different names for the visitors betray their wide variety of tasks and functions assessor, facilitator, surveyor, peer or visiting colleague, abstractor and liaison physician Furthermore the problem of 'who should do the visit hasn't been solved In the evaluation of "Fellowship by assessment" some more unresolved procedure problems are listed whether the practice or the GP should be judged, whether one should give comment or recommendations and whether attainment (what has been accomplished) or development (the process of quality improvement) should be judged [34] In short many questions remain on who should assess in a practice visit and how this or these observers should give what kind of feedback A valid, reliable acceptable, effective and feasible practice visit method to assess practice management with a pure educational objective does not yet exist Availability of such a method would be a valuable asset for the profession - for GP-trainers as well as all practices wanting to make a start with improving practice management

§ 3. VARIATION IN PRACTICE MANAGEMENT AND ITS POSSIBLE EXPLANATIONS

Insight into the variation in practice management and factors explaining this variation would help to determine what optimal management would imply (bench marking) It would also help to direct choices in QI and CME Published research in this area is yet scarce Research is restricted to a limited set of aspects of practice management in general practice

Baker [83] analysed the answers on 76 questions on quality of care of 287 practices in the South East of England The 76 questions were divided into eight categories equipment clinical activities, the team, records, organization, premises, availability and clinics He found considerable variation between practices and summarized in two sentences why insight in variation between practices is so important "While this variation has been shown before, this is the first time that the complete distribution of levels of development has been precisely described' and "if this information were standardized, there would be a data set permitting comparison"

He also made a start with explaining the variation on the 76 questions The practice

having a trainee accounted for 33% of the variation followed by employment of a practice manager younger mean age of the partners, greater list size and a practice address in a more priviliged area, all these characteristics are associated with a more developed practice

Borgiel [34] and Dunn [84] used the practice visit method developed by the Canadian College to analyse variation in the quality of care The instrument consisted of a physician questionnaire, criteria for the audit of medical records and a patient questionnaire and did involve few structural aspects, the procedure was a practice visit by a trained nurse abstractor and a liaison physician The instrument could discriminate between certified CFPC [D] members with and without residency training noncertified members and non members the first getting the highest and the last getting the lowest scores

In the Netherlands variation in practice management was studied for the specific aspects of general practice, such as delegation, recording, workload and job stress Nijland found considerable variation in the number of tasks delegated to the practice assistant [85] More tasks were delegated when the assistant was qualified had her own treatment room, had more years experience, worked in a practice with more partners, or had an official employment contract

Meyboom studied medical recording and found considerable variation in completeness of the problem list', 'use of the records , 'utility of records' , notation of prescriptions' and of 'consultations' [52] Remarkable was that larger practices recorded better and more often than smaller practices Urban practices scored higher on completeness of the problem list' than rural practices Frequent use of the records and good notation correlated with less referrals less frequent consultations by patients and greater satisfaction of patients Smaller practices did not have better recordings than larger practices, but the notation of consultations and the readibility were better Sparse use of the records in home visits and telephone consultations correlated with prescribing much, predominantly nonspecific medication [E] GPs with a style of working characterized by many superfluous clinical actions [86] not only wrote down significantly less but also underused the information on their records

Considerable variation in workload [87] [88] [89] [90] and job stress [91] was found in the UK and the Netherlands, both health care systems with fixed patients lists and capitation payments In the Netherlands 25% of the variation in workload in the model of Groenewegen

[D] CFPC College of Family Physicians of Canada
[E] Non-specific medication is given to patients for complaints not specific for a certain illness e g NSAIDs

was explained by demand related characteristics mainly list size Practice composition added little to explain more variation, except maybe the percentage of elderly patients Job stress was quite unrelated to workload and other practice characteristics

Branthwaite and Ross [92] found widespread job satisfaction based on three separate (but independent) aspects of general practice clinical, psychosocial and managerial aspects, although managing the practice ranked third in giving satisfaction after the other two aspects Sources of pressure or dissatisfaction -affecting young GPs in particular - were uncertainty, isolation poor relations with colleagues disillusionment with the role of GP and awareness of changing demands

Innovation in general practice care - being a choice of practice strategy - was found to be related to the number of partners in the practice, the younger age of the partners and the list size of the practice [93] However personal list size when between 1500 and 3000 patients was hardly related to standards and performance in the provision of service [94]

Howie [95 96] found an inverse relationship between list size and length of consultation time - the latter being an indicator of quality of care [97] Wilkin and Metcalfe [98] found a positive relationship between list size and the time spent on surgery and on home visits List size was also more related to the number of consultations than to workload No relation was found between personal list size and the patients waiting time for a consultation

In spite of the great number of studies on workload and job stress in relation to characteristics of GP and practice the contribution of organizational and managerial aspects to the GP s workload and job stress is still not clear Concluding we miss important information on the variation of almost all aspects of practice management and factors explaining this variation

STUDY DESIGN

The study focused at developing and validating a method for assessing practice management to be used in quality improvement of GPs and practices as well as in quality policy making by professional organization The objectives of the method can be seen at different levels [2 4]

- **Educational for individual GPs**

The method should give individual GPs feedback on strengths and weaknesses to help in improving their practice management and organization and to induce a process of change

- **Screening of the present level of practice management of groups of GPs**

Screening implies obtaining information on practice management in various segments

of the population of GPs in order to enhance planning and guiding of continuing education as well as providing policy makers with necessary information for strategic management

- **Evaluation**

Evaluation implies the measurement of change after an intervention The assessment method may also be used as a research tool to measure change after certain interventions in practice management

An assessment method focused on these objectives was not available according to our analysis of the literature on practice management and there was good reason to have it developed The new method had to consist of valid and reliable instruments for the collection of data and the procedure used in the assessment had to be acceptable and feasible for the profession and the individual GPs in order to induce change and improvement In order to develop such a method a study was conducted with the following aims

- to provide a detailed and systematic description of the domain of practice management and to gain consensus concerning that description in the profession
- to develop a feasible method to assess management in general practice and provide feedback on the results
- to determine variation in practice management and factors explaining this variation
- to determine change in the quality of practice management after a practice visit

The specific research questions to be answered in the study were

- ***What is the value of the visit method for assessing practice management?***
  - What items and features are relevant to general practice management and organization in the Netherlands and is it possible for general practitioners and experts in practice management to agree on a systematic, detailed and practical description of these items and features?
  - What is the validity, reliability, feasibility and acceptance of an assessment method, based on this description of relevant items in practice management?
- ***What is the variation in practice management between practices and GPs and which factors can explain this variation?***
- ***To what extent does the practice visit result in change of practice management?***
  - Does it make a difference to be visited and assessed by a colleague on the basis of mutual assessment or by a trained external non-physician observer?

Global study design

To answer the questions different research designs have been used (table 1)

Question 1: *Development of a descriptive framework for the domain of practice management and of the assessment method*

General practice lacks a systematic framework for practice management, although guidelines on conditions for adequate care have been formulated explicitly in many countries To determine the aspects that belong to the domain of practice management we interviewed experts in the field and performed an extensive study of the literature The resulting framework was next detailed to the level of proceedings, functions tasks and objects and further developed in a structured consensus procedure with a panel of 40 participating GPs and experts in the field of practice management In this consensus procedure we tried to reach agreement on the system, the level of detail and the relevance of the presented aspects of practice management This description of the domain of practice management served as the basis for the first draft of the practice visit method to assess practice management Potentially discriminatory items were selected to serve as indicators for the quality of practice management This led to questionnaires for the GP, his practice assistant [F], patients and a tally list for the visiting colleague or the non-physician observer (a trained external professional) A procedure was developed to help the visitor with the collection of necessary data and the transfer of these data to a prestructured feedback report The practice visit method was tested in a pilot study of 59 GPs mutually visiting each others practice The results of the pilot lead to adjustments in both the instruments and the procedures The improved practice visit method was next used in a study involving 110 GPs in 88 practices

The study involved interpractice visits of colleagues belonging to GP-groups (peer review), practice visits by non-physician observers and practice visits by junior doctors as part of their training The different procedures were subjected to a process evaluation To validate indicators for assessing practice management, the discriminative power of the indicators was studied and factor analysis was done on combinations of indicators to check the internal consistency of specific dimensions of practice management The results were used for further improvement of both the procedure and the feedback The inter-rater reliability was analysed in test-retest procedures, repeating observational parts of the

[F] In the Netherlands receptionist and practice nurse make up for one profession i e practice assistant (a three year training after secondary school)

method. At the end of each visit the GP and the observer were asked to complete a questionnaire and give their opinion on different aspects of the method.

Question 2: *Variation in practice management and factors explaining this variation*

The results of the study in the practices of 110 GPs were further analysed to determine the actual level of practice management and factors explaining differences between practices. Regression analyses were performed with practice and GP-characteristics as independent variables.

Question 3: *Change after the practice visit, comparison of the group of* GPs *mutually visiting each other's practice and the group of* GPs *visited by non-physician observers*

To determine change as a consequence of the practice visit, a randomized study design was developed. The GP-groups recruited for participation were assigned to one of two conditions; one half visited each other's practice (visits by peers) and one half was visited by non-physician observers (not GPs) and were stratified for type of practice, location (rural or urban) and a number of other variables of GP and practice. After the practice visit the GPs discussed the feedback and interdoctor variation in their local educational group and set priorities for change.

After a year all GPs were revisited by non-physician observers with the same set of questionnaires, but an improved prestructured feedback report.

Analysis concerned differences in score per indicator and dimension of practice management between GPs or practices. The differences in score were analysed for all GPs and practices, for those who mutually visited each others practices and for those who were visited by non-physician observers.

Table 1: Study design and data collection

STUDY PHASE → / RESEARCH QUESTION ↓	Development of the practice visit method	Pilot study	First round of visits	Revisit after 1 year
1. Content & Procedure of the visit method	- Study of the literature - Interviews - Consensus procedure (40 GPs)	* Data of 59 mutual visits (GP-trainers)	* Data of 110 visits in 88 practices * Recordings of GP-group meeting * Test-retest data * Questionnaires for evaluation	* Questionnaires for evaluation
2. Variation and its explanation			* Data of 110 visits in 88 practices	
3. Change			* Data of 90 visits in 68 practices * 46 mutual practice visits by peers * 44 visits by non-physician observers	* 81 revisits in 62 practices, all by non-physician observers

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A PRACTICE VISIT TO ASSESS MANAGEMENT IN GENERAL PRACTICE

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ABSTRACT

Introduction- The Dutch organizations representing general practitioners (LHV and NHG) want to promote audit in general practice Practice management is an important structural aspect of care and deserves assessment Therefore the Centre for Quality of Care Research of the universities of Nijmegen and Maastricht (WOK) in the Netherlands started a project to develop a Visit Instrument to assess Practice management (VIP) This article describes its development

Method- To define 'practice management' and to describe and establish its domain and content systematically, a consensus procedure was followed in which 40 GPs participated, 25 of them being specialized in various subjects of practice management This was the basis for the development of a practice visit method, which was tested in 59 GPs The practice visit method includes a procedure for a visit to the practice, and various instruments to obtain data from the GP, from his/her assistant and from patients The data were entered in a prestructured report, providing feedback for the GP

Results- The description of the domain of practice management' resulted in a checklist dividing and listing relevant items in main and subcategories down to the level of proceedings, functions, tasks and objects The practice visit method deducted from the checklist was used to assess relevant and discriminating items in practice management The evaluation by the participants supported the validity of the method, but left doubts on its feasibility Visiting colleagues did not like the administrative duties, but those visited recognized their practice management in the report

Conclusion- It was possible to establish the domain of 'practice management' and to realize a method for its assessment in a practice visit, resulting in a recognizable picture for the participant Yet the method has important drawbacks deserving further development

INTRODUCTION

One of the key issues in promoting quality of care in general practice by the Dutch College of General Practitioners (NHG) and the National Society of General Practitioners (LHV) is offering established general practitioners educational programs and audit based on objective data on clinical competence and performance [1] For some aspects of the field of general practice, such as knowledge, technical skills and consultation skills, useful and valid instruments are available [2] The lack of a method for assessing the organization of the practice was reason for the Centre for Quality of Care Research (WOK) to start a project together with the NHG and LHV, for the development and evaluation of a valid, reliable and feasible method for assessing the management and organization of the GP and his practice [3 4]

Practice visits are increasingly applied for assessment - especially in hospitals by specialists [5] - despite the fact that the method is very intrusive and despite problems with the organization of the visits and the commitment required from the observers In the UK, Canada and New Zealand experiments with practice visits have already been carried out for some time [6 7 8] It may be expected that visitation within general practice could become of importance

Since the first publications on "mutual observation of practice management by GPs [9 10] understanding of optimal practice management has improved considerably There are now four guidelines of the Dutch College in this domain ('Accessibility/ Availability' "Medical recording', "Referral letter' and "Obstetric equipment preconditions") as well as guidelines on equipment and organization (Dutch College Building Stones for Practice Management) [11 12] Furthermore, important research has been done on delegation of tasks to the practice assistant, prevention and keeping patient records The results provide criteria for assessment of practice management Besides, it will be necessary to find an acceptable and feasible procedure for the assessment

For the development of a valid assessment method a careful description of the domain that will be assessed is a first condition [13] The lack of such a description of the concept of 'practice management' and of valid methods for mapping out the practice management of the GP led to a project with the following key questions

- ***Which aspects of general practice belong to the domain of practice management?***
- ***What should be the content and structure of a practice visit method for assessing practice management?***

METHOD

As practice management has been standardized insufficiently, it seemed logical to develop an educational, not a selective practice visit method, i.e. without consequences for the selection of GP-trainers or for (re)certification. The practice visit method should be feasible for quality improvement of the individual GP (practice) as well as the determination of gaps and needs of larger groups of GPs or even the profession as a whole. To achieve this, the method to be developed should:

- cover the total domain of practice management;
- link up with existing and accepted classifications for this part of general practice;
- contain relevant and recognizable aspects of everyday practice management;
- be practical, clear and user-friendly;
- show differences between GPs and practices.

DESCRIPTION OF DOMAIN, FRAMEWORK AND CHECKLIST

Experts on assessment methods stress the eminent importance of a description solidly covering the 'domain' to be assessed [14,15]. Therefore we started an extensive search of the literature and we interviewed experts in this field. To further validate our framework of practice management we used a written consensus procedure [16], in which 25 GPs and experts on the domain of practice management participated. In the first round five experts were asked for each of the main categories to assess the structure and organization, its completeness as well as the description and relevance of the formulated items (proceedings, functions, tasks and objects). The responses of these 25 participants were incorporated in a new framework and a new list.

We then asked 15 experienced GPs participating in a course on practice management to evaluate their practice using the complete checklist. On the basis of their experiences they could comment on items and suggest additions. Finally all 40 participants received a final version of the checklist with again a request for comment. They completed a questionnaire with questions on relevance, completeness, structure and user-friendliness regarding the assessment of practice management.

DEVELOPMENT OF A PRACTICE VISIT METHOD AND INSTRUMENTS

We made an inventory of the literature on intervention strategies and practice visit methods that also take into account aspects of practice management. We also studied the in-

struments and procedures used for data collection as well as for feedback and reporting and we studied how methods were evaluated.

For the development of instruments for data collection, it was necessary to make a selection of indicators that can give information on the quality of practice management. We considered an indicator useful, if it was:

- relevant to practice management;
- representative of a certain category (e.g. ear syringing by the assistant is representative of delegation of tasks);
- discriminatory, i.e. showing differences between GPs and practices;
- unambiguous (preferably questions using a 'yes/no' answer category).

EVALUATION OF THE PILOT

The practice visit method was applied to GP-trainers in the region of the university of Nijmegen. A total of 70 GP-trainers were invited of whom 59 participated. All participants completed a questionnaire at the end of the visit to give their opinion on the method and its instruments: on the content, the structure, the relevance of the feedback, the feasibility of the visit (clear, pleasant, practical, not a burden or a threat) and the extent to which participation had been instructive resulting in clear plans for change. In addition, minutes of group meetings were analysed to gather information on the opinions of the participants.

The actual data on practice management in 59 training practices, collected with the different assessment instruments were analysed after the removal of insufficiently discriminating indicators (e.g. 98% of the GPs had fluorescein-strips). By means of correlational and factor analysis the associations between the different indicators were determined enabling the determination of dimensions in the list of indicators. For example the indicators 'ear syringing' and 'removing sutures' together with other indicators of delegated tasks were interpreted as the dimension 'delegated medical technical tasks'.

RESULTS

DESCRIPTION OF DOMAIN, FRAMEWORK AND CHECKLIST

There is no equivalent for the Dutch concept of "praktijkvoering" in the Anglo-Saxon world, where 'management in general practice' and 'organization in general practice' [17] are used instead. These concepts are more directly associated with the skills of managing or

organizing a practice (team) and to a lesser extent with preconditions for good care. In the Netherlands and Belgium (and also Portugal [18]) "praktijkvoering" is a broader concept referring to precisely these preconditions of good care. In the Basic Job Description of the National Society of General Practitioners (LHV) [19] the concept of "praktijkvoering" is bypassed, using "supportive tasks" instead. Sprij [20] also avoids 'praktijkvoering' and uses the term "management task of the GP" in his book with the same title. 'Praktijkvoering' ('practice management' will be used as its equivalent from now), however, is used by Ten Cate[21] - also in the title of his standard work on the subject - and in "Characteristics of the GP" [a basic policy document for vocational training] [22].

The presence of a special 'Practice Management Committee' (CPV) in the Dutch College, which focused on these preconditions for good care and helped the GP with expedients (the green patient chart, Building Stones for Practice Management) thus contributed to the concretization of the concept of "practice management". In line with this committee (CPV) we defined practice management as "all aspects of the GP's task necessary to realize good care, excluding clinical care or treatment of patients".

Studying the literature and consulting experts resulted in the classification of five main categories presented in table 1. The specification in proceedings, functions, tasks and objects finally resulted in a checklist encompassing 2410 aspects of general practice concerning practice management [23].

Table 1 Chapters of the "Checklist of Practice Management" and their content

I.	**PREMISES AND EQUIPMENT** This chapter encompasses all available materials, buildings and rooms, instruments and medicines, excluding administrative materials (prescription pads, forms etc., see chapter IV "Record keeping") and excluding expedients for communication like telephone and writing materials)
II.	**DELEGATION AND COLLABORATION** "Delegation and collaboration" encompasses all relations of the GP with patients, practice assistant and staff, GP-group and other persons and organizations in the network of health care.
III.	**SERVICE AND ORGANIZATION** "Service and organization" encompasses all aspects of practice management necessary for efficient and effective service and care.
IV.	**RECORD KEEPING** "Record keeping" encompasses the documentation of all care provided as well as the financial documentation.
V.	**QUALITY IMPROVEMENT** "Quality Improvement" encompasses all activities directly related to the improvement and assurance of the quality of practice management and indirectly to the quality of (medical) care of the GP and the practice

DEVELOPMENT OF A PRACTICE VISIT METHOD AND INSTRUMENTS

For the development of our practice visit method we studied the approach of the following countries: the United Kingdom, Canada, New Zealand, Australia and the Netherlands [7, 8, 24, 25, 26]. The instruments used in these methods vary considerably, depending on their aims, but a questionnaire for the GP and an observation of the medical records were always part of the method. A patient questionnaire is an important part of the procedure in Canada. A questionnaire for the practice assistant is not used anywhere. Providing of outcome data in advance, which is required in the UK and Canada, is quite a burden and did not seem feasible for our project. We chose the following approach:

Of the 2410 aspects of practice management in the framework or checklist 234 aspects were selected on the basis of the formulated criteria as most relevant and representative indicators (table 2). These indicators were used in the different instruments developed for the practice visit method: questionnaires for GP and assistant, a tally list for observation in the practice, a short patient questionnaire and an instrument for observation of a number of patient records. For each indicator the most reliable source of information was determined.

Table 2 Totals of indicators selected from the 2410 aspects in the "Checklist of Practice Management" rendered per main category and per subcategory

I	**PREMISES AND EQUIPMENT**		
	Equipment (presence)	24	
	Equipment (use of)	15	
	Equipment outside the practice (doctor's bag)	14	
	Remaining indicators (surfaces of rooms, hygiene)	18	
	Total		71
II	**DELEGATION AND COLLABORATION**		
	Delegation (practice assistant)	35	
	Collaboration (network)	37	
	Total		72
III	**SERVICE AND ORGANIZATION**		
	Opinion of patient (on the service)	25	
	Organization (of information, practice, prevention)	31	
	Total		56
IV	**RECORD KEEPING**		24
V	**QUALITY IMPROVEMENT**		11
			+
	Total selected		**234**
	Added:		
	Characteristics of practice, GP and practice assistant		28
	Workload and job stress		22
			+
	Total (indicators in the practice visit method)		**284**

We developed the following procedures to carry out the practice visit (table 3):

- a procedure that would enable a colleague or a trained observer to collect the data in about half a day.
- a feedback form to present the collected data in an orderly and understandable way. The form follows the main and subcategories of the framework for practice management and helps the observed GP and practice with a summary on gaps in practice management.
- procedures for the discussion of feedback with the observed GP after the visit as well as for the discussion in the GP-group after all visits have been completed.

The practice visit method was tested in some practices and adjusted, followed by a more extensive evaluation by GP-trainers.

Table 3 The practice visit method: procedures for assessment of practice management

Before the visit
- Introduction into the group; setting of date and time
- The participants receive the manual with procedures and questionnaires
- GP and assistant complete the questionnaires

On the day of the visit
- Arrival and introduction of the observer into the practice
- The observer collects the questionnaires completed by GP and assistant
- The assistant hands out 15 patient questionnaires to patients visiting the surgery
- The observer completes the observation of the practice and the medical records
- The observer completes the feedback report with the collected data
- The observer asks the GP to comment on the visit and the report and discusses the conclusions (1 hour)
- Both observer and GP complete an evaluation form

After completion of all observations in a group
- The GPs convene to evaluate the results of each participant and of the group
- An action list is made of items for which participants or the group wish to receive postgraduate education

EVALUATION IN THE PRACTICE

The evaluation concerned experiences of the 59 GP-trainers with the practice visit on the one hand and the analysis of the scores on the instruments of the practice visit method on the other hand. The method was introduced into the groups (existing groups of GP-trainers) and it met positive as well as negative reactions. In the beginning trainers were suspicious of such an intrusive method. Some trainers were not convinced of the benefits and wondered if the considerable investment (0.5 - 1 day) was proportional to the not directly visible advantages. The first positive experiences of colleagues nevertheless contributed to a satisfactory participation (84%). The questionnaires on the method were completed by 51 observing (86%) and 44 observed GPs (75%).

The appreciation of the practice visit method hardly depended on having been an observer or a participant. (table 4). The method was not considered threatening, although observers more often perceived the visit as threatening than the participants (72% and 91% respectively). The observers considered the practice visit more instructive than those observed, but they also rated doing the observation as less pleasant. In 43% of the GPs the practice visit resulted in plans for change.

Both participants and observers were asked whether the feedback gave a clear picture of the main categories of practice management. 'Practice equipment' was rated highest, followed by 'total practice management' and 'record keeping'. The other main categories got a lower rating.

Criticism mainly concerned the writing and calculations that had to be done to generate feedback, as well as the low news value of some feedback. A number of important aspects for daily practice like "dealing with workload" and "time management" was considered to be insufficiently operationalized. Furthermore, one missed the possibility of comparison to other practices; reference numbers would put the outcome of the feedback more into perspective. In spite of the criticism the method was mostly evaluated positive in the discussions in the trainers' groups afterwards: in nearly all groups a plan of action and priorities was drawn up and implemented in future postgraduate training.

Table 4 The appreciation of the VIP on a five-point scale by the observing and observed GPs. Percentages 'strongly agree' + 'agree'

	Observing GPs N=51 (strongly) agree	Observed GPs N=44 (strongly) agree
The practice visit method		
- is not a threat to the GP or assistant	72	91
- was instructive for one's own practice management	53	43
- was not unpleasant for the observer	41	50
- resulted in clear plans for change	43	43
The feedback was a good reflection of:		
Total practice management	69	82
I Premises and equipment	77	89
II Delegation and collaboration	46	52
III Service and organization	58	59
IV Record keeping	69	70
V Quality Improvement	67	45

ANALYSIS OF THE SCORES

A total of 59 completed reports with data on the visits was available for further analysis. The analysis concerned frequency distributions of scores on the various indicators (including the selection of non-discriminatory indicators), the inter-rater reliability of scores between GP and practice assistant and the internal consistency of the selected (sub-)categories of indicators.

We eliminated 32 insufficiently discriminating indicators (< 5% or > 95%) and 5 ambiguous indicators. An additional number of 22 indicators was eliminated from the GP-questionnaire, because of the high agreement (Cohen's kappas > .70) between GP and practice assistant. These indicators concerned delegation of tasks to the assistant.

In a multivariate analysis the correlations between indicators were determined. Some of the presupposed categories proved to have good internal consistency (table 5). In other instances, mainly categories concerning organizational aspects of the GP, we did not find comparable correlations between indicators.

Table 5 Dimensions resulting from factor analysis (principal component analysis with varimax rotation) per chapter of the assessment instrument and their Cronbach's alpha (N=59)

Chapter/Dimension	Cronbach's alpha
PREMISES AND EQUIPMENT	
- Equipment (presence)	.71
- High investment	.72
- Equipment (use of)	.70
- Equipment outside the practice (doctor's bag)	.56
- Emergency-equipment	.42
- Hygiene, sterility, maintenance	*
DELEGATION AND COLLABORATION	
- Delegated medical technical tasks	.80
- Delegated administrative tasks	.51
- Delegated financial/ bookkeeping tasks	.67
- Collaboration in the GP-group	.79
- Collaboration in primary care	.70
- Collaboration with secondary care	*
SERVICE AND ORGANIZATION	
- Accessibility of patient information	.63
- Organization of preventive activities	.80
- Service	*
- Accessibility	*
- Organization of surgeries	*
RECORD KEEPING	
- SOAP-system and basic data	.82
- Recording of prescriptions	.80
QUALITY IMPROVEMENT	
- Organization of quality improvement	*

* Dimensions not confirmed in factor analysis

DISCUSSION

Our procedure for test development is customary for the development of competence tests [15 27], but it has not yet been used in the development of instruments to assess practice management The results are encouraging, but they also make clear that we still have a long way to go and that our practice visit method needs critical evaluation and further adjustments

Positive are the feasibility of the visit (the observation, the feedback report and the discussion afterwards take less than 5 hours hardly interrupting the practice routine) and its validity (the majority of the participants recognized their own practice management and organization in the feedback) The practice assistant appeared to be a reliable source for questions on delegated tasks

Various dimensions, known from the literature and incorporated in our method after modification were also internally consistent in this study We confirmed the 'Delegation index of Nijland [28] (α = 70 [29] , in our study α = 80), for example, as well as the 'High investment in equipment' dimension described by Bradley & Watkins [30] in the UK, where GPs also have to do without compensation for expenses on equipment In the Record keeping' chapter we confirmed the dimensions of 'basic data" and 'use of SOAP-system" both described previously by De Melker [16]

The practice visit method appeared to pose no threat and being observed was hardly considered a burden for the practice The discussion in the GP-group generally resulted in a clear plan of action but its implementation remained unclear

The practice visit still had some clear shortcomings resulting in adjustments Our practice visit is aimed at GPs wanting to assess their practice management as part of quality improvement Participants often did not realize the importance of actually doing something with the results and they generally tended to justify their prevailing practice management The practice visit method should point out more precisely which aspects should be considered for change

The pretention of the practice visit method to be a necessary assessment of the entire field of practice management created high expectations among the participants To meet that claim the method was still premature Thus, participants did not recognize their practice management sufficiently in the feedback of the dimensions of 'collaboration", "service and organization" and 'organization of quality improvement" and they rated the valid-

ity of these dimensions low. It seems to be difficult to find useful and relevant indicators for these rather abstract dimensions. Through the selection of new indicators and a continuous evaluation of data collected by the method, further improvement can be realized which will increase the expressiveness of the feedback. This also holds for the quality and thus expressiveness of the reference numbers On the basis of the data of this study it seems desirable to apply the practice visit method to a large number of unselected GPs and practices.

As far as its feasibility is concerned, the practice visit may have been thought to be instructive, but the ensuing administrative activities were not thought to be all that pleasant. The participants clearly expressed their wish to put out the administrative parts of the practice visit. A follow-up study will be performed to find out which procedure of assessing practice management in a visit is most feasible. By giving quality improvement priority in the development of the practice visit method, negative associations with (re-)certification and selection have failed to appear.

We really do think to be on the right track with our approach and we hope that the method will appeal to GPs who wish to improve their practice management. That in turn will provide data and inspiration for the necessary further improvements.

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ASSESSMENT OF MANAGEMENT IN GENERAL PRACTICE. VALIDATION OF A PRACTICE VISIT METHOD

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ABSTRACT

Background- Practice management in general practice is yet ill defined, a systematic description of its domain as well as a valid method to assess it are necessary for research and assessment.

Aim- To develop and validate a method to assess practice management of GPs and practices.

Method- Relevant and potentially discriminating indicators were selected from a systematic framework of 2410 elements of practice management to be used in an assessment method (VIP = Visit Instrument to assess Practice management). The method was first tested in a pilot study and, after revision, evaluated in order to select discriminating indicators and to determine validity of dimensions (factor and reliability analysis, linear regression).

Results- 110 GPs were assessed with the practice visit method using 249 indicators; 208 of these discriminated sufficiently at practice level or at GP-level. Factor analysis resulted in 34 dimensions and in a taxonomy of practice management. Dimensions and indicators showed marked variation between GPs and practices. Training practices scored higher on five dimensions; single-handed and dispensing practices scored lower on delegated tasks, but higher on accessibility and availability.

Conclusion- A visit method to assess practice management has been developed and its validity studied systematically. The taxonomy and dimensions of practice management were in line with other classifications. Selection of a balanced number of useful and relevant indicators was nevertheless difficult. The dimensions could discriminate between groups of GPs and practices establishing the value of the method for assessment. The VIP method could be an important contribution to the introduction of continuous quality improvement in the profession.

Keywords- Assessment, practice management, practice visit, quality improvement, taxonomy, indicators.

INTRODUCTION

One of the key issues in promoting the quality of care in general practice and primary care teams is offering general practitioners feedback on their clinical competence and performance based on objective data in order to reduce unacceptable variation So far valid and reliable methods have been developed for assessing for instance clinical performance [1,2], clinical competence [3,4,5], medical knowledge [6] and consultation competence [7,8,9,10] A valid and reliable method for assessing practice management has to complete this set of assessment methods but is still missing, although practice management is increasingly perceived as an important prerequisite for good quality of clinical care In a Dutch consensus study 'practice management' was defined as 'all aspects of the GP s task to achieve good care, excluding clinical care or treatment of patients' [11] and it concerns premises and equipment, delegation to staff and collaboration with other care providers, service and organization administration and organizing quality improvement [12] Poor management often results in a lower standard of clinical care [13]

Berwick [14] put it in day-to-day terms ' a result lost a specialist who cannot be reached, a missing requisition, a misinterpreted order, a vanished record, a long wait for a CT-scan, these are all-too-familiar examples of waste, rework, complexity and error in a doctor's life " For the average doctor quality fails when the system fails

Practice visit methods are increasingly used in Anglo-Saxon countries, for example in Australia [15], the UK [16,17], Canada [18], New Zealand [19] This ubiquitous use is surprising since research on the validity and reliability of these methods is still in its infancy [20] Ideally a valid and reliable method for assessing practice management - just like any other assessment method - demands development from and coverage of a well defined 'domain' (i e the field it should cover) This would permit the selection of a balanced number of indicators for every dimension or aspect of that domain [21] Every indicator should first of all be relevant for the purpose of quality assessment and ideally be based on guidelines for good clinical practice Besides good coverage by relevant indicators, such a method should also be reliable The selection of indicators from a framework of, theoretically seen, meaningful dimensions, should ideally be confirmed empirically [22] Scores for these dimensions should also permit discrimination between practices with different organizations or between GPs with different styles of management To gain acceptance in the profession a clear notion of the validity and reliability of practice visit methods will be increasingly important, not just for the target group, the GPs Therefore a study was set up to evaluate an assessment method covering the domain of management in general practice

METHOD

Box 1 General practice in the Netherlands

The more than 7170 GPs play a central role in the Dutch health care system (1 GP per 2274 patients)[23]. The GP has a role as gate keeper, referring only 6% of all health problems presented to him to medical specialists [24]. He (87%) or she (13%) generally works independently, owns the premises and is always assisted by a receptionist or practice assistant, a hybrid especially trained to combine both functions. Although 49% of the GPs still work single-handedly, many of them have a GP trainee and/or employ a - usually younger and female - GP. All GPs cooperate in GP-groups or locum groups - ideally 8 to 10 GPs - which coordinate emergency care (7x24 hrs), home care, cooperation with other care providers and quality improvement. About 20% of the GPs work in group practices (half of which are health centres with mostly salary-paid GPs) together with district nurses, social workers and physiotherapists among others. The Dutch GP has a small lab and mostly relies on external facilities for his diagnostic procedures. A diminishing proportion - now 11% - has a dispensing practice. An average of 60% of the patients pays a capitation fee (Dfl. 130,- per year), the remaining 40% is privately insured (fee for service).

THE FRAMEWORK FOR PRACTICE MANAGEMENT AND THE PRACTICE VISIT METHOD

To develop a valid visit method we first studied the literature and interviewed experts in the field to identify relevant elements of practice management and to establish the main chapters and their subdivision [16, 17, 18, 19, 25, 26, 27]. Using a structured consensus procedure, involving 40 GPs, concrete and relevant elements, belonging to the domain of Dutch general practice management (box 1), were selected and included in a systematic framework (box 2). This framework comprised 2410 different elements of practice management - proceedings, functions, tasks and objects - arranged into six chapters and 17 theoretical dimensions (first column, table 3) [11, 12, 18]. It enabled us to select 284 indicators, that could be expected to be discriminative between GPs and practices and that could be assessed without difficulty in the visit method [28]. The development and the procedure of the practice visit method (VIP [A]) are presented in box 2. The results of a pilot study among 59 GPs were used to adapt the method and the instruments [12]. Adjustments implied removing the insufficiently discriminating indicators (score of <5% or >95%) and indicators questioned more than once in the discussion with the GP-groups after the visits. New indicators were selected on the basis of the evaluations predominantly for 'workload' (indicators for estimated hours per week for various tasks) and 'job stress' (scores on five validated scales for job stress were used as indicators [29]). The revised method contained 249 indicators.

[A] VIP = Visit Instrument to assess Practice management refers to the practice visit method

Box 2 The development of the practice visit method (the VIP)in three stages and its procedure and the time required

• The development

Defining content and structure of the domain
- Interview of experts; search of the literature to identify aspects and to structure the basic framework
- Completion of the framework encompassing detailed objects, tasks and performance
- Written consensus procedure on the framework presented as a checklist (80% agreement; 40 GPs)
  1. Comment on the checklist and on structure, relevance and description of the items (25 GPs)
  2. GPs study their practice management with the checklist + give comment (15 GPs)
  3. All 40 GPs give opinion on completeness, structure, acceptability and feasibility of the checklist

Definition: Practice management concerns all aspects of the GP's tasks necessary to realize good operation of care, excluding clinical care or treatment of patients

Development of the instrument
- Selection of indicators that are representative, discriminative, easy to measure and undisputed
- Determine the most reliable source of information per indicator (GP, assistant, patient or observer)
- Design a procedure for data collection and feedback

Pilot study (59 GPs)
- exclusion of indicators with little discrimination (<5% >95%, e.g. otoscope = 100% = invalid)
- factor analysis and construction of scales
- inter-rater reliability for similar questions to both GP and assistant expressed in kappa

• The procedure

Before the visit	**assessee**	**observer**
- Introduction; setting of date and time	30 min.	30 min.
- The participant receives the procedure manual and completes the questionnaires	30 min.	0 min.
- Assistant hands out 15 patient questionnaires to patients waiting for consultation		
On the day of the visit (4-5 hours)		
- Arrival of the observer on the arranged date		
- The observer completes his observation of the practice and the medical records	0 min.	120 min.
- The observer completes the feedback report with the questionnaires and tally list	0 min.	60 min.
- The observer asks the GP to comment on the visit and the feedback report	60 min.	60 min.
- Both observer and GP complete an evaluation form	10 min.	10 min.
After completion of all observations in the practice or local GP-group		
- Results of the participants are discussed with other participants or persons involved	120 min.	120 min.

EVALUATION OF THE PRACTICE VISIT METHOD

GPs were then invited to participate in the evaluation of the practice visit method on a voluntary basis: they were recruited by advertizing in medical journals as well as during postgraduate training courses and by approaching representatives of local GP-groups. GPs, assistants, patients and observers completed questionnaires and observation sheets before and during the practice visit (box 2).

The response category of the items was mostly 'yes or no'; for some items the 'number of minutes/hours per week'. For the items on job stress a 5-point Likert scale was used. Indic-

ators were analysed either at practice level (table 1) or at GP-level (table 2) The answer of the most full-time working, senior GP in the practice was used for assessment at practice level

Per chapter of the framework correlations between indicators were analysed (factor analysis, PCA and rotation) Beforehand non-discriminating indicators were removed (score of <5% or >95%) We explored the factor structure and tried to interpret the various factors A factor loading of > 35 of an indicator was required to enter a scale or dimension Reliability analysis was used to further select indicators for scale construction and to confirm the empirical framework (table 3)

To determine the power of the assessment method to discriminate between GPs and practices, differences in practice management between various types of practices and GPs were studied training practice or not [30], single-handed practice or not, rural (<30 000 inhabitants) or urban practice, dispensing practice or not, and 'at least full-time assistance per fte GP' or not [31 32 33] Linear regression analysis was performed using these five binary explanatories as independent variables and the score of each empirical dimension of practice management (with Cronbach's alpha > 50) as dependent variable The scores for workload and the scores on the scales for job stress were used similarly as dependent variables (table 3)

RESULTS

Data of 110 GPs in 88 practices were available for analysis For a number of characteristics the study group was comparable to Dutch GPs in general (sex, year of establishment member of Dutch College, percentage of private patients, characteristics of the assistant) However, there were fewer single-handed practices (44% vs 54% nationally) and rural practices were overrepresented 50% vs 11% nationally

Of the 249 indicators in the VIP 21 insufficiently discriminating indicators were removed as well as 20 indicators that were questioned more than once in the discussion with the GP-groups after the visits The remaining 208 indicators were analysed at practice level (table 1) and at GP-level (table 2), 187 indicators (indicators for workload and job stress were not included) entered the factor analysis, that revealed 24 constructs or dimensions harbouring 158 indicators (84%), for 13 dimensions the Cronbach's alpha was > 60 and for 21 > 0 50 Together with the 10 dimensions for workload and job stress 34 dimensions or scales could be distinguished in the practice visit method, structured in an empirically

Table 1: 129 indicators for practice management (practice level; frequencies; N=88), arranged per chapter (I to VI) in dimensions (bold)

I. PREMISES AND EQUIPMENT	
Equipment in treatment/examination room and lab	
Presence of:	*% yes*
Fingersplints	70%
Nasal ribbon gauze	69%
Caustics to treat recurring epistaxis	58%
Intravenous fluid and giving set	35%
Plaster of Paris	12%
Test for microscopic blood in faeces	54%
Urine culture set	46%
Eyedrill	84%
Tonometer	43%
IUD insertion kit	84%
Electrocautery equipment	71%
Proctoscope	51%
Audiometer	48%
Electrocardiograph	38%
*Fluorescent penlight	89%
*Sonic aid for detection of arterial occlusion	40%
Hygiene	
Presence in the examination room of:	
Sanitary pad	81%
Disposable baby diaper	22%
Bucket for used equipment	73%
Roller towel or disposable towels	37%
Presence in treatment room of:	
Sterile cloth with hole' for minor surgery	35%
Routine for disinfection of table after a contaminating procedure	83%
Use of gloves when practice assistant cleans instruments	31%
Use of indicator tape to check sterilization (practice assistant)	23%
II DELEGATION AND COLLABORATION	
Medical technical tasks delegated to the practice assistant	
Removing sutures (by Assistant=practice assistant)	65%
Liquid nitrogen application to warts	57%
Ear syringing	53%
Vena punction	46%
Examination and follow-up of cardiovascular patients	35%
Making an EKG	34%
Audiometry	33%
Gluing small wounds	25%
Applying pressure gradient bandage in leg ulcer	22%
Laboratory tasks delegated to the practice assistant	
Microscopic examination of urine sediment	82%
Blood sugar testing	81%
Test for microscopic blood loss in faeces	39%
Counting leucocytes in blood	14%
Informing patients on diseases by the practice assistant	
Practice assistant gives advice on common complaints by telephone	93%
Practice assistant gives info on DM, asthma/COPD, cardiovascular disease	41%
Number of patient info leaflets the practice assistant hands out/week	median 2.4 (0-20)
Medical organizational tasks delegated to the practice assistant	
Practice assistant provides referral cards for certain categories of patients	84%
Practice assistant summarizes correspondence on patients in the records	80%
Practice assistant writes prescriptions for common complaints requested by tel.	74%
Practice assistant has the task to invite at-risk patients for check-up	39%
Secretarial tasks delegated to the practice assistant	
Practice assistant is responsible for handling the answering machine	76%
Practice assistant fills out name/address/residence in forms	59%
Practice assistant types referral letters	25%
Practice assistant has a task in replenishing the doctor's bag	16%
Practice assistant assists the GP on call in weekends	12%
Other indicators of delegation	
* Practice assistant decides if requests require a consultation or a home visit	89%
* Practice assistant tapes a sprained ankle	15%
* Practice assistant makes a vaginal smear	7%
* Practice assistant writes accounts	76%
* Practice assistant does the bookkeeping	53%
* Time reported by GP of consultation with practice assistant29 min/wk	
* Time reported by practice assistant of consultation with GP44 min/wk	
Collaboration with colleagues	
Structure of the GP-group	
Presence of a locum tenens contract	75%
Arrangements for replacement in case of sick leave of GP	89%
Minutes are kept of GP-group meetings	74%
The agenda is mailed in advance to all participating GPs	60%
The GPs take rotas for each other during holidays	91%
Agenda includes discussion + decision making on:	
Policy concerning medical issues	89%
Policy concerning certain categories of patients	60%
Practice list size and definition of practice territory	69%
Policy concerning home care	39%
Policy concerning CME	64%
Policy concerning public relations	59%
Policy concerning emergency care service	58%
* Meetings between colleagues (minutes/week)	50 min.
Collaboration with partners in primary care (minutes/wk)	
Separate consultation with district nursing	7.5 min.
Separate consultation with physiotherapists	12.0 min.
Separate consultation with social worker	5.2 min.
Consultation with primary care workers in a home team	10.0 min.
Consultation with pharmacist (pharmacotherapy meetings)	7.5 min.
Collaboration with partners in secondary care/hospital	
GP can request gastroscopy without referral	86%
GP can request tests for Deep Vein Trombosis without referral	29%
GP can request EKG-diagnosis without referral	30%
GP attends an oncology/necrology meeting at least once a year	60%
GP has regular informal contact with specialists	55%
GP has regular contact with mental health service institute	42%
Frequency of joint meetings with GPs and specialists	3.4 per year
Collaboration with homes for elderly + other care providers	
Policy of institution on when to call the GP in emergencies	40%
Policy of institution on when to call the GP for death certificates	44%
Arrangements with homes for the elderly on medication	35%
GP knows the special provisions for temporary care in institution when home care patient is ill or relatives want a break/holiday	83%
Arrangements with the Service for addicted patients	38%
Collaboration with psychotherapists	44%
Protocol/arrangements on euthanasia with people concerned	53%
Arrangements with ambulance	49%
* Regular contacts with the school(s)	30%
III SERVICE AND ORGANIZATION	
Accessibility	
Waiting time before getting through to practice by telephone	4.6 ± 4.8 min
Patient approves of emergency service during office hours	93%
Patient approves of the information on practice regulations	91%
Patient approves of the on-call arrangements by the GP-group	88%
Patient approves of the accessibility by telephone in emergencies	83%
For small injuries the patient prefers practice to emergency department in hospital	72%
Organization of the surgeries/availability	
Patient can consult his/her own GP by telephone the same day if requested	94%
Patient has a say in the duration of the consultation	78%
Patient wants a greater say in the organization of the practice	11%
Patient reports to be hindered by the practice assistant in contacting his/her own GP	10%
Patient often gets a different GP during office hours	8%
* Patient misses (the service of) a free-flow consultation	22%
Organization of preventive activities	
There is a list of patients indicated for flu vaccination	92%
The practice has a system for (re)calling patients indicated for a cervical smear	90%
Patients indicated for flu vaccination are actively invited	64%
There is a list of patients with DM	55%
There is a recall system for patients who don't report for preventive consultation	24%
There is a sex-age register	21%
There is a special surgery for DM patients	19%
There is a register of patients with increased cardiovascular risk	18%
Practice identifies and monitors patients with increased cardiov. risk	6%
* Number of preventive consultations in appointment book in next 3 months	5.7 ± 9.3
Other indicators of service and organization	
* Patient can hear the conversation at the patient desk	55%
* Patient reports overhearing snatches of conversation in consultation room	9%
* A leaflet with practice information is available for the patient	68%
* Less than one third of leaflets is provided by pharmaceutical companies	52%
* Patient library contains more than five books	25%
* The practice has a system for hospital visits by GP	80%
* Practice has an 'emergency telephone line' for patients	58%
IV RECORD KEEPING	
Level of computerization of medical records	
Financial administration is computerized	87%
Maintenance therapy is computerized	46%
Patient records are computerized	17%
Problem list is computerized	18%
V ORGANIZATION OF QUALITY IMPROVEMENT	
Asssessment on outcome and year report	
Presence of a year report	16%
Assessment with the help of data of:	
The sick fund	25%
Prescriptions	33%
Referral letters	10%
Diagnostics	12%
Other feedback data	10%

* Indicators that are not or weakly associated with dimension (table 3)

Table 2 79 indicators for practice management of the GP (GP-level; Frequencies; N=110), arranged per chapter (I to VI), in dimensions (bold)

I PREMISES AND EQUIPMENT

Use by GP of equipment, diagnostics and therapeutics

Use or application by the GP of	*% yes*
Bladder catheter insertion (>1x/year)	91%
Peak flow meter	85%
Nasal forceps	82%
Disposable local anesthetic eye drops	81%
Vibration tuning fork	72%
Microscopic examination of skin snip for mycosis	67%
Microscopic examination of clue cell/trichomonas	62%
Taping a sprained ankle (>1x/ ½ year)	57%
Pressure gradient bandage in leg ulcer	52%
Q.I.-meter (Quetelet Index)	51%
Stenopeic aperture	32%
20D magnifying glass for fundoscopy	25%

Content of the doctor's bag

Presence in the doctor's bag of	*% yes*
Diazepam rectiole	91%
B_2-sympathicomimeticum in spray	83%
Geudal airway	72%
Sticks for blood glucose (not expired)	67%
Thermometer	65%
Urinary catheter	60%
Referral letters	54%
Sticks for urinary examination (not expired)	44%
Steristrips	36%
Mucus extractor	26%
Nasal ribbon gauze	23%
* Vial Inventory	32%
*Number of vials (out of 10) in vial case	9.5 ± 1.0 vials
*Number of vials not yet expired	8.2 ± 2.1 vials

II DELEGATION AND COLLABORATION

* Meetings with specialists	19.0 minutes/week
* Frequency of consultation of specialist per month	8.6 x /month

III SERVICE AND ORGANIZATION

* Waiting time before the patient is called in for consultation	11.2 ± 4.3 min
* Patient reports disturbances of the consultation by telephone calls	37%

Use of patient information on diseases by the GP

Patient approves of the patient information on diseases and complaints in the practice	76%
Patient reports to have got an explanation occasionally with a demo in the consultation	33%
Patient reports to have received a leaflet occasionally in the consultation	31%

Accessibility of patient information for GP or patient

Leaflets are well stored and easily accessible	82%
Demo-model of the lumbar vertebral column is available	74%
Demo-plate of the abdominal organs is available	73%
A leaflet with a diet for constipation is available	70%
Leaflet on cardiovascular diseases is available	67%
Leaflet on low back ache is available	65%
Leaflet on acne is available	54%
* GP reports to have read the content of the leaflets he hands out	63%
* Frequency of GP handing out patient info leaflets/week is	4.2 ± 3.5 x/wk

IV RECORD KEEPING

Recording using the SOAP-system

Reason for encounter is mentioned in the record (S=subjective)	78%
Results of examinations and investigations (Objective)	76%
Concise statement of the situation by GP (Analysis)	58%
Plan/ Action/ Info is described in the record(Plan)	81%

Recording of prescriptions

Strength of the medication indicated	80%
Dosage and administration indicated	71%
Duration of the medication indicated	43%
Actual medication of the patient retrievable	57%

Basic data or list of problems/illnesses

Problem list is present	61%
The year of diagnosis of the disease is mentioned	61%
The family history is noted	16%
Basic data, summary of specialist's letters are noted	76%
Profession of the patient is noted	24%

Extent of use of records by GP

Use of records when doing home visits	83%
Use of records during patient consultation by telephone	52%
Use of records in repeat prescription	48%

V ORGANIZATION OF QUALITY IMPROVEMENT

(see VI WORKLOAD: tertiary activities = a measure for time spent on QI)

VI WORKLOAD AND JOB STRESS

Workload of GPs working 90% or more in hrs/week (N=76)

Consultations and telephone calls to patients		21.1 ± 6.6
Free-flow consultation hours		2.9 ± 3.6
Home visits		9.0 ± 4.2
Primary activities (based on appointment book)	Total #	**33.0 ± 6.5**
Documentation, record keeping and telephone calls		4.7 ± 2.8
Financial administration		1.1 ± 1.4
Hours on call		5.3 ± 2.1
Time spent on collaboration with other care providers (minutes)		
Consultation time with colleagues	50 ± 27 min	
Total consultation time in primary care	54 ± 32 min	
Consultation time with consultants/hospital	19 ± 12 min	
Consultation time with practice assistant	44 ± 38 min	
Total patient-bound consultation time (hours)	=	2.8 ± 6.6
Secondary activities	Total #	**13.7 ± 3.9**
Continuous Medical Education, QI		1.1 hrs/wk
Reading professional literature		1.2 hrs/wk
Assessment and supervision/Balint		0.4 hrs/wk
Tertiary activities (total CME, QI, reading, etc)		**2.6 ± 1.3**
Quaternary activities (professional meetings)	+	**0.9 ± 0.8**
Total workload in the practice (core activities)		**50.2 ± 8.0**
Optional activities	+	3.0 ± 9.1
Total workload in one week (all activities)		**53.2 ± 10.1**
Desired workload		49.4 ± 9.5

Job stress (N = 110)

Job satisfaction (pleasure, interest and commitment)	7.9 ± 2.6
Satisfied with available time for practice management	13.9 ± 3.3
Costs vs benefits	7.9 ± 1.9
Experienced workload	66.3 ± 8.8
Experiencing inappropriate demands by patients	11.1 ± 2.8

* Indicators weakly associated with other indicators, dimensions

\# Due to missing values the added totals do not agree with calculated totals

Table 3: Taxonomy of practice management; theoretical and empirical dimensions, internal consistency and percentage of difference in score between groups of GPs/practices and the average score of 110 GPs in 88 practices. (Linear regression analysis, only significant findings are presented)

Theoretical aspects per chapter	Empirical dimensions and internal consistency (Cronbach's α)	α	Training practice %	Rural practice %	Single-handed %	Dispensing GP %	Assistance ≥100% %
I PREMISES AND EQUIPMENT (45 *indicators*)							
1 Equipment/other materials	Equipment in treatment/examination room and lab	.69			- 18 ***		+ 12 ***
	Use by GP of equipment, diagnostics and therapeutics	.62	+10 ***	+ 6 *	- 13 ***	-	-
2 Premises/hygiene/disinfection	Hygiene	.56					- 9 *
3 Equipment out of office	Content of the doctor's bag	.65		+ 7 *		-	-
II DELEGATION AND COLLABORATION (57 *indicators*)							
4 Delegation of tasks to practice assistant:	Medical technical tasks delegated to the assistant	.74		- 11 **	- 17 ***		
§ Intake	Laboratory tasks delegated to the assistant	.60			- 18 **		
§ General care and diagnostic tasks	Informing patients on diseases by the assistant	.53	+ 17 **		- 10 *	- 20 *	
§ Organization and coordination	Medical organizational tasks delegated to the assistant	.35	+ 10 **			- 30 ***	
	Secretarial tasks delegated to the assistant	.39	+ 8 *	+ 12 **			
5 Collaboration with colleagues	Collaboration with colleagues (local GP-group)	.56				- 21 ***	
6 Coll. with partners in primary care	Collaboration with partners in primary care	.56			- 21 ***		
7 Coll. with partners in sec. care/hospital	Collaboration with partners in secondary care/hospital	.33		-12 **			
8 Coll. with homes for elderly and other care providers	Collaboration with homes for elderly and other care providers	.58					
III SERVICE AND ORGANIZATION (30 *indicators*)							
9 Reception, accessibility	Accessibility	.74		+ 3 ***	+ 2 *		+3 ***
10 Availability /Organization of services/ Continuity	Organization of the surgeries/availability	.60			+ 7 **	- 10 **	
11 Organization of information	Use of patient information on diseases by the GP	.55			- 9 ***		
(on medical and psychosocial problems)	Accessibility of patient information for GP or patients	.64					+ 8**
12 Organization of preventive activities	Organization of preventive activities	.61	+ 21 **			- 23 ***	+ 13 **
IV RECORD KEEPING (20 *indicators*)							
13 Patient records (means and forms)	Recording using the SOAP-system	.59				- 8 **	
§ Structure	Recording of prescriptions	.80	+14 *			- 14 **	
§ Usage	Basic data or list of problems/illnesses	.60				- 9 ***	
§ Processing	Extent of use of records by GP	.59					
	Level of computerization of medical records	.67					
V ORGANIZATION OF QUALITY IMPROVEMENT (6 *indicators*)							
14 Assessment and Evaluation (practice)	Assessment on outcome and year report	.66					+ 11 **
15 CME, reading and supervision/audit	CME, audit, reading (see VI Workload, tertiary act.)	#					
VI WORKLOAD AND JOB STRESS (21 *indicators*)							
16 WORKLOAD Primary to quaternary activities	Workload in direct care/week (contact with patients; primary act.)	#		- 6 **		-	
	Workload in indirect care/week (secondary activities)	#	+18 ***			-	
	Workload in QI/week (CME, audit, reading; tertiary activities)	#		+ 12 **		-	
	Workload of professional meetings/week (quaternary activities)	#		+ 22 **		-	
	Total workload of practice activities/week	#				-	- 3 *
17 JOB STRESS (existing scales)	Job satisfaction (pleasure, interest, commitment)	.72			- 6 *	-	
	Satisfied with available time for practice management	.76				-	
	Investment minus reward / Cost - benefit	.74			- 5 **	-	
	Experienced workload	.93				-	
	Inappropriate demands by patients	.67			+ 5 *	-	

***= p<0.01 ** = p<0.05 * = p< 0.1 '-' = not in regression mode # not applicable

based taxonomy of practice management (table 3). 29 Of the 187 indicators did not fit well into the dimensions of the taxonomy. E.g. the indicator "the GP is often disturbed during the consultation by telephone" hardly correlated with any other indicator, as was the case for "the practice has a leaflet with information on the practice" , "the patient library contains more than five books" .

Table 3 also contains the differences in scores on the dimensions between groups of practices or GPs with different characteristics and the average score of the study group. Training practices scored significantly higher on 5 dimensions; single-handed practices and dispensing practices scored lower on tasks delegated to practice assistants, but higher on accessibility as well as on organization of the surgeries and availability. Practices having more practice assistants scored higher on hygiene, equipment, accessibility, organization of patient information and organization of preventive activities. The indicators for workload and job stress also showed marked variation. GPs in training practices spent significantly more time on indirect care, single-handed GPs reported less job stress, yet experienced more inappropriate demands by patients and GPs in rural practices spent less time on direct care but more on quality improvement and professional meetings.

DISCUSSION

This is the first time that the validity of a visit method to assess practice management was studied in more detail [28] The framework, defining the domain of practice management permitted a balanced selection of relevant indicators for the practice visit method The results from a test in a large number of practices confirmed this framework and selected dimensions of practice management to a large extent [34 35 36 37], both proving to be in line with national [38] and international classifications [39] It was possible to discriminate between specific groups of practices or GPs, which established the value of our method for quality assessment purposes Dimensions of practice management proved to discriminate between (groups of) practices or GPs, showing differences to be expected on the basis of previous studies [31 32 40 41 42] For example, single-handed GPs in the Netherlands have less equipment, delegate fewer tasks to assistants, but score higher on accessibility and availability Training practices serve as a model and score higher on the use of equipment, delegation of medical tasks and in organization of preventive activities The list of indicators is an inventory of aspects, which can be improved in a substantial number of practices

A low-profile observer served as a mirror gathering only factual information for the feedback report and leaving little room for judgement or approval, resulting in a good inter-rater reliability of the VIP [B] It contributed to the nearly unanimous acceptance among participants and a positive opinion on the feasibility (costs time required) of the visit method, costs are about £ 200 per visit, 90% of the GPs reported to want a follow-up within 2-5 years

Nevertheless, some critical remarks on the approach and results may be made

First of all, a careful selection of indicators from a framework, laboriously constructed in a consensus procedure, does not completely warrant a good validity A checklist with 2410 elements may seem a rich thesaurus, yet useful and significant indicators were hard to select Many of the 2410 elements would probably be met by all GPs and practices anyway and - if not - often lacked sufficient support by the profession in terms of clear guidelines for practice management

One may also wonder if our starting point for the development of a valid method - de-

[B] Test-retest procedures were done for all observations including special test-retests for the observations of the patient records Comparable results (Cohen s kappa > 60) were found between different GP-observers and between GP-observers and non-physician observers Also inter-rater reliability between the researcher (acting as a gold standard) and observers was determined (60 < Cohen s kappa< 80)

rived from the educational field - is applicable to practice management We assumed that if our framework and theoretical dimensions were based on valid assumptions the theoretical dimensions would be confirmed in the factor analysis and would be equally distributed over the framework and its chapters The dimensions were confirmed in the VIP but the internal consistency of most dimensions expressed in Cronbach's alpha's was not high Making dimensions, however, was not the prime objective First of all the focus was on selecting relevant and independent indicators mutually excluding each other and indicative of an exclusive aspect of practice management A well-equipped practice is, for example likely to have an audiometer, an eyedrill as well as a proctoscope yet these indicators have a singular meaning and presence of each depends on many factors In our approach one would therefore not expect the dimensions to be highly internally consistent but enough to permit data reduction and scale construction resulting in a more surveyable and meaningful picture of practice management

The 29 indicators not fitting into dimensions are also part of a careful proportional selection of the domain and therefore are an essential part of the content of the practice visit method The single indicator "the GP is often disturbed during consultation by telephone", for example, is important, because it probably indicates a distinct characteristic of a GP('s organization) permitting these disturbances

One could argue that we assessed only a limited number of aspects essential for quality of care This widely held point of view implies that a valid test for quality of care should look for missing essentials In a study in Australia of practice visits [15] to assess practices on meeting the entry standards, 55% met all standards and 80% met all but 1 or 2 criteria which leaves little or no room for improvement and focuses on bad apples [43,44] Our choice for a formative method gave priority to the attainable assuming that substandard aspects would reveal themselves in the process It is the theory of shifting the bell curve to the right instead of cutting its tails Our method is unfit for selective purposes (recertification, acceptance for trainership becoming fellow of the College) the method and its questions are based on honest answers in order to get a true picture of one's practice management and this sets it apart from tests for knowledge clinical or consultation skills that leave the participant uncertain on the correct answer and permit outperforming oneself [45]

The practice visit method to assess structural aspects of general practice is in our opinion an important step forward towards the introduction of systematic quality improvement in the profession [46] However, further work needs to be done in selecting and balancing indicators

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Table 1 The 50 indicators, concerning practice equipment, analysed at practice (N=88) and GP level (N=110), per dimension. Percentages presence/use

PRACTICE LEVEL (24 indicators)		**GP-LEVEL (26 indicators)**	
Equipment in treatment/examination room and lab		**Use of equipment, diagnostics and therapeutics**	
Presence of	*% yes*	*Use by the GP of*	*% yes*
Fingersplints	70%	Bladder catheter insertion (>1x/year)	91%
Nasal ribbon gauze	69%	Peak flow meter	85%
Caustics to treat recurring epistaxis	58%	Nasal forceps	82%
Intravenous fluid and giving set	35%	Disposable local anesthetic eye drops	81%
Plaster of Paris	12%	Vibration tuning fork	72%
Test for microscopic blood in faeces	54%	Microscopic examination of skin snip for mycosis	67%
Urine culture set	46%	Microscopic examination of clue cell/trichomonas	62%
Eyedrill	84%	Taping a sprained ankle (>1x/½ year)	57%
Tonometer	43%	Pressure gradient bandage in leg ulcer	52%
IUD insertion kit	84%	Q.I.-meter /(Quetelet Index)	51%
Electrocautery equipment	71%	Stenopeic aperture	32%
Proctoscope	51%	20D magnifying glass for fundoscopy	25%
Audiometer	48%		
Electrocardiograph	38%		
*Fluorescent penlight	89%	*Vial inventory	32%
*Sonic aid for detection of arterial occlusion	40%	*No. of vials (out of 10) in vial case	9.5 ± 1.0 amp
		*No. of vials not yet expired	8.2 ± 2.1 amp
Hygiene		**Content of the doctor's bag**	
Presence in the examination room of	*% yes*	*Presence in the doctor's bag of*	*%yes*
Sanitary pad	81%	Diazepam rectiole	91%
Disposable baby diaper	22%	B_2-sympathicomimetic in spray	83%
Bucket for used equipment	73%	Geudal airway	72%
Roller towel or disposable towels	37%	Sticks for blood glucose (not expired)	67%
Presence in the treatment room of		Thermometer	65%
'sterile cloth with hole' for minor surgery	35%	Urinary catheter	60%
Routine for disinfection of the table after a		Referral letters	54%
contaminating procedure by assistant	83%	Sticks for urinary examination (not expired)	44%
Use of gloves when assistant cleans instruments	31%	Steristrips	36%
Use of indicator tape to check sterilization by the assistant	23%	Mucus extractor	26%
		Nasal ribbon gauze	23%

* indicator is not part of the dimension

EQUIPMENT AND CHARACTERISTICS OF PRACTICE OR GP

Tables 2 and 3 show the association between characteristics of practices and GPs on the one hand and dimensions of equipment on the other.

• Association at practice level

The score on the dimension of "Equipment of treatment/examination room and laboratory" proved to be significantly higher in practices with more partners and practices with at least full-time assistance. Together the two characteristics explained 20% of the total 25% explained variance in our regression model. 'Rural or urban' practice, personal list size (><2500 pat.) or 'the practice has a qualified assistant or not' did not explain much vari-

ance. Different types of practices hardly showed much difference in score on the dimension of "Hygiene".

Table 2 Linear regression of the dimensions of "Equipment of treatment/examination room and lab" and of "Hygiene" analysed at practice level, Scores*, p-value and explained variance (per characteristic and total) (N=88 practices)

	Practices N=88	Equipment of treatment/ examination room and lab (14 *indicators*)			Hygiene (8 *indicators*)		
The practice		difference	p	EV	difference	p	EV
is single-handed	56%	-2.5	.0002	13%	-.4	.4	2%
is a rural practice	51%	.1	.8	0%	-.1	.7	0%
has less than 2500 patients	50%	.0	.9	0%	-.2	.8	0%
is a training practice	7%	.3	.6	2%	-.6	.2	1%
has less than 40% private patients	59%	.6	.3	3%	-.1	.9	0%
is a dispensing practice	13%	-.1	.9	0%	-.5	.4	1%
has at least full-time assistance	57%	1.7	.01	4%	.2	.1	3%
has qualified assistance	65%	.3	.6	1%	.2	.7	1%
Total explained variance				**25%**			**7%**

* Because of partial dependence of the explaining variables the estimation of the averages of the subcategories deviates from the general average

- **Association at GP-level**

Single-handed GPs scored significantly lower on the dimension of "Use of equipment, diagnostics and therapeutics" , whereas full-time GPs (at least 90%) and GP-trainers had a higher score. 'Personal list size (><2500 pat.)', 'having participated in the vocational training or not' did not reveal significant associations.

Table 3 Linear regression of the dimensions of "Use of equipment, diagnostics and therapeutics" and of "Content of the doctor's bag" analysed at GP- level, Scores*, p-value and explained variance (per characteristic and total) (N=110)

	GPs N=110	Use of equipment, diagnostics and therapeutics (12 *indicators*)			Content of the docter's bag (11 *indicators*)		
The GP		difference	p	EV	difference	p	EV
works single-handedly	48%	-1.5	.001	6%	-.3	.6	0%
works in a rural practice	50%	.7	.1	3%	.8	.2	3%
has more than 2500 patients	36%	-.3	.4	1%	.1	.5	0%
is a GP-trainer	7%	1.2	.01	8%	.4	.4	0%
works full-time (≥ 90%)	71%	1.8	.0006	7%	1.1	.07	3%
did vocational training	73%	.4	.4	0%	1.0	.08	1%
Total explained variance				**27%**			**10%**

* Because of partial dependence of the explaining variables the estimation of the averages of the subcategories deviates from the general average

INTRODUCTION

In his standard work on practice management (1973) Ten Cate [1] stated that the premises arrangements and equipment of a practice largely depend on the personal taste of the individual GP In the meantime developments like the Basic Job Description of the GP Dutch College Guidelines on the quality of care and additional tasks like home care emergency service and minor surgery clearly demand high quality of premises and equipment, of completeness, proper use and maintenance [2] To what extent GPs and practices vary in this respect is not known and the few representative data are 10 years old by now [3] This led to our study question

- ***How do GPs and practices vary in presence and use of equipment and what characteristics of GP or practice explain this variation?***

METHOD

STUDY GROUP AND INSTRUMENT

For our study we used data collected in practice visits in 1994 By advertising in medical journals as well as during postgraduate training courses and by approaching representatives of GP-groups and key persons in the profession groups of GPs were invited to participate The observers were either colleagues, trained professionals (not GPs) or junior doctors placed in a practice In the practice visit we used the Visit Instrument to assess Practice management (VIP)[4] The practice visit method consisted of questionnaires for the GP and his/her assistant, 15 questionnaires for patients visiting the surgery that day and an observation of the practice This information was condensed in a feedback report for the GP The visit took half a day to one day and included both data collection and the final discussion on the feedback with the assessed GP

It is difficult to determine if the equipment of a practice and its use meet certain demands in quality since standards or guidelines are missing The Dutch College Building Stones for practice management [5 6 7 8] do give some direction but cannot be considered standards' and a guideline of 'Equipment' is missing The guidelines of the Dutch College imply some equipment usually already present in most practices and cover only part of the possibly relevant equipment [9] An exception is the guideline "Obstetric equipment and preconditions' [10], giving clear guidelines on the equipment of GPs providing obstetric care

For a representative selection of valid indicators to determine (inter-practice) variation on the domain of equipment the "Checklist of Practice Management [11] served as a thesau-

rus This selection was used for the first draft of a visit method tested in a pilot study of 59 GPs [4] The results of the pilot helped to select a final set of 56 indicators that could be considered both representative for the quality of practice equipment and discriminatory between GPs and practices An auriscope, for example, is available in every practice, does not discriminate and hence is useless as an indicator Starting point for a relevant selection were the Dutch College Guidelines on quality of care, the Building Stones for practice management and the Basic Job Description

Of the 56 indicators 6 concern the premises and 50 the "presence of equipment', the "use of equipment, diagnostics and therapeutics and the equipment outside the practice" in accordance with the systematics of the "Checklist of Practice Management' The observer assessed 41 indicators during the observation and the remaining 15 indicators were part of the questionnaire for the GP (12 questions on use of equipment diagnostics and therapeutics) and the practice assistant (3 questions on hygiene)

ANALYSIS

A first step was the calculation of the frequency of each indicator partly at practice level (27 indicators) partly at GP-level (29 indicators) Indicators that practices usually have in common, like an audiometer or electrocardiograph, were analysed at practice level Factor analysis of the scores was consequently applied to identify dimensions of equipment Every dimension can be considered a scale, the sum of the answers (yes/no) making the score

For the total study group as well as for the subgroups of GPs and practices - for example single-handed practices - raw average scores and standard deviations were calculated These scores served as dependent variables in the analysis for the relation between (presence and use of) practice equipment and characteristics of practice, GP and assistant (independent variables) The characteristic 'sex' was not included in the regression model, none of the 19 female GPs worked single-handedly and all, except one, worked part-time The 6 indicators of 'premises" were not included in the factor analysis, since their level of analysis - partly the practice, partly the GP - was different They were used as dependent variables

Partly on the basis of previous studies [3 12] we selected 8 practice characteristics and 6 GP characteristics (see tables 2 and 3)

Linear regression analysis was performed to determine the contribution of each characteristic to the score on the dimensions

RESULTS

STUDY GROUP

To participate in the study fifteen GP-groups (109 GPs) applied In addition 2 groups of GPs training junior doctors were recruited (20 GPs) Eventually 110 of the initial 129 interested GPs could be included Of the 110 participants 46 were visited by a colleague (mutual visit) 44 by a trained professional and 20 by a junior doctor

PREMISES

Of the assistants 71% reported to have their own treatment room The treatment room in the practice was 10 2 m^2 on average and the laboratory 6 2 m^2 The consultation room was 17 2 m^2 on average and the adjoining examination room 8 9 m^2 The total surface of the practice was 63 1 m^2 on average just below the 64 m^2 considered as the norm for a standard practice of 2 350 patients Practices with few private patients (<40%) had an average of 6 m^2 (24 m^2 vs 30 m^2) less surface in their combined consultation and examination room (p = 007) Single-handed practices (often without a separate treatment room) had a treatment room that on average was 6 m^2 (3m^2 vs 9m^2) smaller than that of practices with more partners (p= 02)

EQUIPMENT

Factor analysis of indicators of presence and maintenance of equipment (practice level) and of the use of equipment and equipment outside the practice (GP-level) revealed two dimensions at each level (table 1)

- **Equipment of treatment/examination room and laboratory (14 indicators, α = .69)**

This dimension refers to the presence of equipment in a practice The first five indicators of the practice equipment represent equipment for emergencies Regarding the presence of ophthalmological equipment we observed that in 89% of the practices a fluorescent penlight, in 84% an eyedrill and in 43% a tonometer was available A quarter of the practices proved to have no electrocautery equipment and half of the practices no proctoscope

- **Hygiene (8 indicators, α = .56)**

This dimension concerns practice routines for attentiveness and hygiene during and after physical examination or minor surgery. Sanitary pads and a bucket for used equipment were present in most examination rooms. Much less present were a roller towel or disposable paper towels. A minority of the assistants reported the use of gloves to clean instruments and indicator tape to check sterilization was not used very often either.

- **Use of equipment, diagnostics and therapeutics (12 indicators, α =.62)**

Of the GPs 91% performed catheterization at least once a year, 85% used the Peak flow meter regularly, as recommended in the College guideline on asthma and 32% used the stenopeic aperture (recommended in the College guideline on ophthalmological diagnostics). Regular microscopic examination (at least once quarterly) of a skin snip for mycosis or of clue cells/trichomonas in vaginal fluor (Guideline "Fluor vaginalis") were performed by 67% and 62% of the GPs respectively; 57% claimed to tape a sprained ankle at least once every half year (Guideline "Ankle sprain").

- **Content of the doctor's bag (11 indicators, α = .65)**

Vials considered essential for emergencies were nearly always present in the doctor's bag, but sometimes happened to be expired. Only 44% of the GPs could show "sticks for urinary examination" in their bag. A nasal ribbon gauze for treatment of epistaxis and mucus extractor to free the breathing way were present in 23 and 26% of the bags respectively.

EQUIPMENT IN DUTCH GENERAL PRACTICE

Van den Hombergh P, *Grol* R, *Van den Hoogen* HJM, *Van den Bosch* WJHM.

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ABSTRACT

Objectives- To investigate the quality of structural aspects of practice organization concerning premises, equipment and hygiene, and to determine differences between practices and GPs.

Design- Sample survey

Setting- 110 GPs in 88 practices in the Netherlands in 1994.

Main measures- Indicators of premises and equipment and its use were selected from a thesaurus validated in a consensus round among 40 GPs and experts and tested in a pilot study. The indicators resulted in questionnaires for GP, visiting observer and practice assistant, which were part of the Visit Instrument to assess Practice management (VIP).

Results- 56 Indicators proved to be discriminatory (more than 5% or less than 95% available) and they were used in factor analysis revealing four components of equipment: 1. Equipment of treatment/examination room and laboratory, 2. Hygiene, 3. Use of equipment, diagnostics and therapeutics, 4. Content of the doctor's bag.

All components showed marked variation on both indicators and dimensions; practices that were not single-handed, with full-time GPs or GPs with at least full-time assistance scored higher on most components of equipment.

Conclusion- Marked variation between practices could be established for equipment. Results are in line with findings in the UK that high investment in practice equipment shows marked variation. Single-handed practices had significantly less equipment because of the disincentive to spend money on it.

A Dutch College guideline on premises and equipment in General Practice is recommended.

DISCUSSION

The attempt to reflect the outfit - the premises and equipment - of a GP or a practice in valid and useful feedback has been successful However, it was difficult to select sufficient indicators which were representative of practice management and showed relevant variation between practices and GPs Most indicators could be used for the construction of scales of dimensions in equipment, which enabled us to show important variation in premises and equipment between GPs and practices This variation could be traced back to characteristics of the GP and the practice, single-handed practice or more partners' being by far the most important one Differences in equipment between practices and GPs make clear where improvement is possible and feasible That was why this study was performed in the first place The result raises the question whether premises and equipment are currently still a matter of personal taste Small differences between practices are inevitable (urban and rural training practice or not), but they should be made explicit The lack of a special guideline of equipment in general practice would be no problem, if all equipment were specifically mentioned in the clinical guidelines in question, like the Peak flow meter (VIP-score 85%), the stenopeic aperture (VIP-score 32%) and the microscopic examination of clue cells/trichomonas (VIP-score 62%) That half of the GPs has no proctoscope and over 55% no sticks for urinary examination in the doctor s bag or that the GP has an average of 9 5 of 10 essential vials in the doctor's bag are results that do not allow judgements on quality, because guidelines for these items do not exist only recommendations in the College Building Stones for practice management

A further restriction of our study was that the relation between practice management and quality of care, and that between structure and outcome in general practice has never been made clear yet The presence of an electrocardiograph (38%) does not necessarily contribute to the quality of diagnostics if a nearby emergency unit has an excellent electrocardiographic service And how do the 20% GPs, who do not have nasal forceps examine a patient with nasal obstruction? Do they use an auriscope?

The relation between the dimensions and characteristics of the practice or the GP provides some clear starting points for improvement For example the single-handed practices with a small (- 6 m^2) or non-existent treatment room, a low score on "Equipment of treatment/examination room and laboratory' and little practice assistance picture poorly equipped practices with a limited array of services, clearly pointing the way for corresponding improvements

Single-handed GPs and GPs with little practice assistance were associated with a lower score on "use of equipment, diagnostics and therapeutics" and full-time working GPs with a higher score. Partnership, working full-time and more than average practice assistance were associated with more equipment and a wider array of procedures and diagnostic or therapeutic activities.

GP-trainers scored higher on use of equipment, but hardly on any other dimension. GPs with vocational training (73%) did not differ significantly from GPs without. A possible explanation is that in the past less priority was given in vocational training to technical skills and equipment.

Although our study did not primarily intend to extrapolate towards the Dutch GP in general, the GPs in our study could well be compared to the average Dutch GP (sex, year of establishment, vocational training, member of the Dutch College, percentage of private patients, characteristics of the practice assistant). The study included fewer GPs from single-handed practices (44% vs 54% nationally) and more from rural practices (50% vs 11% nationally) [13].

When compared to the results of the Dutch National Survey of Morbidity and Intervention in general practice five years ago, practice scores have hardly changed Only two of the 7 indicators of the scale for equipment used in this Survey allow comparison and show an increase over the past five years. the sonic aid for the detection of arterial occlusion (24%→40%) and the tonometer (24%→43%). The publication of the two guidelines "Arterial occlusion of the limbs" and "Ophthalmological diagnostics" could explain this increase in score.

Comparison of our results with those of studies of Bradley & Watkins [14] and Baker [15] shows that a proctoscope (51% vs 84 and 88% respectively), an electrocardiograph (38 vs 73/72%), a Peak flow meter (85 vs 97/100%) and a bottle with intravenous fluid and a giving set (35 vs 70%) are less often available in Dutch practices, but an audiometer (48 vs 21/26%) and electrocautery equipment (71 vs 44/35%) more often. An explanation might be that proctology, electrocardiography and diagnosis of asthma/COPD traditionally get more attention in the UK, because of longer distances between patient and hospital and the frequent occurrence of the problem.

Another striking result in the study of Bradley & Watkins [14] was, that practices in Devon and Cornwall showed marked variation in the investment in (expensive) equipment. Baker [15]

conducted a study in three districts (N =287) and explanatory variables for "high investment in practice" were: GP-trainership, presence of a practice manager, the (younger) age of the partners, a larger practice list size and consequently more income and the location in a more privileged area. In our study the dimension of "Investment in expensive equipment" (α = .69) also consisted of 7 indicators (eyedrill, tonometer, IUD insertion set, audiometer, electrocardiograph, electrocautery equipment, urine culture set) and actually was a subdimension of "Equipment of treatment/examination room and laboratory". Practices with more partners not only seem to have invested significantly more in expensive equipment than single-handed practices (p= .0002) but also in practice assistance per full-time GP (p=0.01). GP-trainership and practice size hardly showed any association with investment in expensive equipment. The conclusions of Bradley & Watkins that "high investing general practitioners suffer financially" and that "this creates a disincentive to spend money on equipment" and of Baker that "total practice income rather than income per partner is the important influence for investment in development" are probably also relevant in the Netherlands. In the Netherlands "investment in expensive equipment" also affects the net income of the GP and more partners in one practice implies more possibilities to share investments. This effect on investment, though, seems less distinct in the Netherlands than in England.

More uniformity in practice equipment expressed in a guideline is recommended. The Dutch College guideline on "Obstetric equipment and preconditions" already specifies equipment for obstetric care and a Dutch College guideline on premises and equipment seems a logical next step.

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the GP on call in weekends.

The remaining tasks were insufficiently associated with one of the five dimensions and were isolated indicators. For example in 89% of the practices the assistant decided whether a request required a consultation or a home visit, in 15% of the practices she taped sprained ankles and in 7% she made vaginal smears. In 76% she wrote accounts and in 53% she did the bookkeeping.

Table 1 Five dimensions of tasks of the practice assistant; factor analysis of 30 indicators; percentages (N=88 practices)

Medical technical tasks (α = .74)	
Removing sutures	65%
Liquid nitrogen application to warts	57%
Ear syringing	53%
Vena punction	46%
Examination and follow-up of cardiovascular patients	35%
Making an EKG	34%
Audiometry	33%
Gluing small wounds	25%
Applying pressure gradient bandage in leg ulcer	22%
Laboratory tasks (α = .60)	
Microscopic examination of urine sediment	82%
Blood sugar testing	81%
Test for microscopic blood loss in faeces	39%
Counting leucocytes in blood	14 %
Informing patients on diseases (α = .53)	
Assistant gives advice on common complaints by telephone	93%
Assistant gives information on DM, asthma/COPD, cardiovascular disease	41%
Number of patient information leaflets the assistant hands out per week	median 2.4 (0-20)
Medical organizational tasks (α = .35)	
Assistant provides referral cards for certain categories of patients	84%
Assistant summarizes correspondence on patients in the records	80%
Assistant writes prescriptions for common complaints requested by telephone	74%
Assistant has the task to invite at-risk patients for check-up	39%
Secretarial tasks (α = .39)	
Assistant is responsible for handling the answering machine	76%
Assistant fills out name/address/residence in forms	59%
Assistant types referral letters	25%
Assistant has a task in replenishing the doctor's bag	16%
Assistant assists the GP on call in weekends	12%
Remaining tasks of the practice assistant	
Assistant decides whether requests require a consultation or a home visit	89%
Assistant tapes a sprained ankle	15%
Assistant makes a vaginal smear	7%
Financial tasks	
Assistant writes accounts	76 %
Assistant does the bookkeeping	53 %

TASKS AND CHARACTERISTICS OF THE PRACTICE ASSISTANT AND THE PRACTICE

• Characteristics of the practice assistant (table 2)

Practices where assistants worked more than 32 hours per week scored significantly higher on the dimension "medical technical tasks" (p = .01). Practices with an experienced assistant (> 5 years) or an assistant working more than 32 hours week delegated significantly more lab tests to the assistant (p= .05 resp. p= .01).

None of these four characteristics of the assistant explained much variation on the remaining three dimensions. Whether the assistant was qualified or not hardly influenced the score on the five dimensions of tasks of the practice assistant. The percentages of explained variance for the characteristics of the assistant were low.

Table 2 The association between "tasks of the practice assistant" and characteristics of the practice assistant (N=88). Linear regression

	Practices N=88	Medical technical tasks		Laboratory tasks		Informing patients		Medical organizational tasks		Secretarial tasks	
		9 tasks		*4 tasks*		*3 tasks*		*4 tasks*		*5 tasks*	
Average scores		**Mean 3.1 ± .4**		**Mean 1.0 ± .2**		**Mean 1.6 ± .2**		**Mean 2.7 ± .4**		**Mean 1.9 ± .4**	
The practice assistant		diff.	p	diff.	p	diff.	p	diff.	p	diff.	p
works > 5 years as assistant	46%	+1.1	.07	+ .5	.05	+.2	.4	-.2	.5	+.3	.3
works > 32 hours per week	45%	+1.6	.01	+ .8	.01	+.2	.5	+.3	.3	+.3	.8
is qualified	65%	+ .5	.4	.0	.9	.0	.6	-.2	.4	-.2	.5
has an employment contract	80%	+ .4	.5	+ .1	.7	+.3	.2	+.3	.3	0	.9
Total explained variance		**13%**		**13%**		**4%**		**4%**		**3%**	

The table shows the calculated differences between the scores on dimensions of 2 groups of practices. For example: practices with an experienced assistant (> 5 years) delegated on average 1.1 more tasks (of the 9 tasks of the scale) than practices where the assistant had less than 5 years of experience. For a correct interpretation of the scores we included the average score (e.g. 3.1 tasks of all 9 tasks) of the total group of practices in the table.

• Characteristics of the practice (table 3)

In single-handed practices (p=.006), rural practices (p= .05) and practices without a separate treatment room for the assistant (p = .004) the practice assistant had significantly fewer medical technical tasks. All characteristics together explained 28% of the variance, while 'the assistant having a separate treatment room at her disposal' proved to be the most important explaining variable. In single-handed practices (p = .02) and in practices with no separate treatment room for the assistant (p = .01) the practice assistant performed lab tests significantly less often. 'The practice assistant informing patients' scored

significantly higher in training practices (p = .03); the lower score in single-handed (p = .1) and dispensing practices (p = .09) was not significant. In training practices (p = .03) the assistant had more medical organizational tasks and in dispensing practices almost none (p= .001). In rural practices the assistant had more secretarial tasks than in urban practices (p= .02).

Larger practices (>2500 patients/fte GP), practices with less than 40% private patients, practices with at least full-time assistance per fte GP or practices with qualified assistance dit not score significantly higher or lower on any of the five dimensions. Large practices spent significantly less time on joint meetings between GP(s) and assistants in minutes per week as reported by the assistant (p=.04) .

Table 3 The association between "tasks of the practice assistant" and characteristics of the practice (N=88). Linear regression

Average scores	Practices N=88	Medical technical tasks 9 tasks Mean 3.1 ± .4		Laboratory tasks 4 tasks Mean 1.0 ± .2		Informing patients 3 tasks Mean 1.6 ± .2		Medical organizational tasks 4 tasks Mean 2.7 ± .4		Secretarial tasks 5 tasks Mean 1.9 ± .4	
		diff.	p	diff.	p	diff.	p	diff.	p	diff.	p
The practice											
is single-handed	56%	- 1.5	.006	- .7	.02	- .3	.1	- .1	.7	+ .2	.5
is a rural practice	51%	- 1.0	.05	- .3	.3	.0	1	- .2	.4	+ .6	.02
has less than 2500 patients	50%	.0	1	+ .1	.7	+ .1	.5	- .1	.6	.0	1
is a training practice	7%	- .1	.8	+ .1	.8	+ .5	.03	+ .4	.03	+ .4	.1
has < 40% private patients	59%	+ .6	.2	+ .3	.3	+ .2	.4	.0	1	+ .3	.2
is a dispensing practice	13%	- .8	.4	0	1	- .6	.09	- 1.2	.001	.0	1
has at least full-time assistance per fte GP	57%	+ .6	.3	+ .2	.5	.0	1	.0	1	- .2	.4
has own treatment room for assistant	76%	+1.8	.004	+1.8	.01	+ .2	.3	+ .2	.4	+ .6	.04
Total explained variance		**28%**		**27%**		**23%**		**30%**		**22%**	

- **Questions to the patient**

Only 5% of 1500 patients questioned reported that the practice had delegated too many tasks to the practice assistant and 10% experienced the assistant as an obstacle in their contact with the GP. Logistic regression analysis with four characteristics of the assistant showed a significant positive relation between satisfaction over the number of delegated tasks on the one hand and the assistant being qualified on the other hand.

A questionnaire for the practice assistants about their background, tasks and conditions for delegation was part of the practice visit method. Two more questions on delegation of tasks to the practice assistant were included in the patient questionnaire (15 questionnaires per GP). The questions to the assistant were selected from the 164 aspects in the "Checklist of Practice Management" [15] concerning possible tasks for delegation. The selection of "indicators" was based on the Dutch College Guidelines, the Basic Job Description and indicators that in earlier studies had proved to discriminate between practices [16]. We looked for valid and representative indicators to determine inter-practice variation in tasks of the practice assistant. A selection of 49 indicators was tested in a pilot study of 59 GPs and indicators showing no differences between practices were removed.

The satisfactory agreement between answers of GPs and assistants on delegated tasks (kappa 0.6 - 0.8) made us choose for the practice assistant to collect information on delegated tasks and not for the GP. The practice assistant can judge best which tasks are actually delegated to her or which are not.

After the pilot study and selection of items 35 indicators still remained. Of these, we first calculated the averages for the group. The analysis was performed at practice level (N=88), because generally similar tasks are delegated in a specific practice. If more GPs in a practice participated in the practice visit, we used the answer of the senior practice assistant. Subsequently factor analysis was used to identify dimensions in the answers. A factor load > .40 was required for an indicator to enter the dimension. For the dimensions we calculated the raw average scores and these scores were used as dependent variables in the analysis of the relation between characteristics of practice and assistant on the one hand and tasks of the practice assistant on the other. The following characteristics served as independent variables [17]:

The practice assistant:

- number of years working as practice assistant
- number of working hours per week
- qualified or not
- an employment contract or not

The practice:

- single-handed practice or not
- rural practice or not
- more than 2500 patients per fte GP or not

- training practice or not
- less/more than 40% private patients
- dispensing practice or not
- at least full-time assistance per fte GP or not
- treatment room for the assistant or not

Linear regression analysis was used to find out how each characteristic was associated with the score on the dimensions

Finally we compared our scores on tasks to the scores in the Dutch National Survey of Morbidity and Intervention in general practice (1986/1987) to determine shifts in the percentage of practices that delegate tasks to the practice assistant

RESULTS

For a number of characteristics the study group was comparable to the Dutch GPs in general (sex, year of establishment member of Dutch College percentage of private patients characteristics of the assistant) However there were fewer single-handed practices (44% vs 54% nationally) and rural practices (municipality with less than 30 000 inhabitants) were overrepresented 50% vs 11% nationally They concerned practices in commuter villages or urbanized rural areas like Het Gooi and the surroundings of Utrecht and Eindhoven

The practice assistant had worked an average of 7 4 years in that profession and an average of 5 2 years in that practice She worked an average of 30 hours and was appointed for 75% On average the practices had 95% assistance per full-time GP In 80% of the practices the assistant had an employment contract in 76% she had her own treatment room and in 65% she had the required qualifications Protocols or written procedures on (repeat)prescription were available in 35% of the practices and in 28% minutes of the joint meetings between the GPs and the assistants were made The assistant reported to consult with the GP for an average of 29 minutes per week, on average 15 minutes less than what the GP reported (44 minutes)

Indicators and dimensions of tasks of the practice assistant

Nearly all 35 selected indicators had a score of more than 5% and less than 95% Delegating tonometry (3%) and measurement of visual acuity (4%) discriminated insufficiently

between practices and were left out as indicators. Three other indicators could not enter the factor analysis, because they were preconditional for delegation. Factor analysis on the remaining 30 indicators resulted in five dimensions, some with good, others with limited internal consistency (table 1).

- **Medical technical tasks (9 indicators, $\alpha = .74$)**

This dimension refers to therapeutic and diagnostic tasks of the practice assistant in relation to patients. Practices differed considerably in the delegation of these tasks. Removing sutures, liquid nitrogen application to warts, ear syringing and performing vena punctions were tasks of the practice assistant in about half of the practices; the examination and follow-up of cardiovascular patients, gluing small wounds and applying a pressure gradient bandage in leg ulcer in about one third to a quarter of the practices.

- **Laboratory tasks (4 indicators, $\alpha = .60$)**

The practice assistant performed microscopic examination of urine sediment and blood sugar tests in 80%, tests for microscopic blood loss in faeces in 39% and counted blood leucocytes in 14% of the practices.

- **Informing patients on diseases (3 indicators, $\alpha = .53$)**

Almost all assistants used to give advice on common complaints by telephone. As part of their task in prevention programs (DM, asthma/COPD, cardiovascular disease) 41% informed patients. The assistant handed out a leaflet to a patient 2.4 times per week on average (minimum 0, maximum 20 per week).

- **Medical organizational tasks (4 indicators, $\alpha = .35$)**

In 84% of the practices the assistant handed out referral cards for certain categories of patients, in 80% she summarized correspondence on patients in patient files, in 74% she wrote prescriptions requested by telephone for common complaints and in 39% she invited patients belonging to certain risk groups for check-ups.

- **Secretarial tasks (5 indicators, $\alpha = .39$)**

The assistant was responsible for handling the answering machine in 76% of the practices, in 59% she filled out name/address/residence in forms, in 25% she typed referral letters, in 16% she replenished the doctor's bag and in 12% of the practices she assisted

TASKS OF THE DUTCH PRACTICE ASSISTANT

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ABSTRACT

Objectives- To determine what tasks in general practice are done by the practice assistant and to investigate inter-practice differences in tasks of the practice assistant and factors influencing these differences

Design and setting- Sample survey; 110 GPs in 88 practices in the Netherlands in 1994.

Main measures- Indicators were selected from a thesaurus validated in a consensus round among 40 GPs and experts and tested in a pilot study. The indicators resulted in questionnaires for the practice assistant and the GP and in questions on delegation in a patient questionnaire, which were part of the Visit Instrument to assess Practice management (VIP).

Results- 35 Indicators in the assistant questionnaire were discriminatory (more than 5% or less than 95% delegated), 30 of them revealing five components of tasks of the practice assistant in factor analysis: 1. Medical technical tasks, 2. Laboratory tasks, 3. Informing patients on diseases, 4. Medical organizational tasks, 5. Secretarial tasks.

All components showed marked variation on both indicators and dimensions; single-handed practices, dispensing practices and country practices delegated less and practices with a separate treatment room for the assistant, delegated more tasks.

Conclusion- Marked variation between practices could be established for tasks of the practice assistant. Comparison with research a decade ago showed little progress in the number of tasks delegated in practices except some tasks recommended by the Dutch College, for example: Diabetes check-ups, PAP smears and Nitrogen treatment of warts. Recommendations on delegation, if applicable, should be part of guidelines on the quality of care. Availability of training for practice assistants in new tasks is recommended.

INTRODUCTION

The question what tasks should be delegated to the practice assistant in a general practice and even more important, what tasks are done more accurately by the practice assistant, is still point of discussion in the profession [1] In that discussion the LHV recently took a clear stand and expressed itself in favour of "better qualified assistants" (assistentes-plus) and "more than full-time assistance" in a 'new style' of general practice, where preventive tasks make up for a larger proportion of the regular care [2 3]

The GP has so many tasks that it will be increasingly necessary to delegate tasks to the practice assistant which can be performed just as well or even better by her What the GP delegates at present and how far that is away from what he could delegate is unknown In the eighties the tasks the GP could delegate and really delegated were studied and a survey was made of them [4 5 6] Since that time the profession of practice assistant has strongly developed and the training has been adapted to the changing job description of the GP These changes concerned the increase in preventive tasks the shift of tasks from hospital to GP, the publication of the Dutch College Guidelines and computerization [7 8] Increasingly the term "practice assistant" was used instead of the customary "doctor's assistant and the professional organization (NVDA) flourished [9] Against this background [10] it is important to know what tasks can be delegated to the practice assistant, what inter-practice differences there are in the number of tasks delegated to the practice assistant and what could explain these differences

More than ten years ago three variables were found to make a contribution to the delegation of more tasks a separate treatment room for the practice assistant, the type of practice (single-handed vs health centre and group practices) and a qualified assistant [5 11 12] In order to find out whether the situation has changed since the eighties we performed a study to get answers to the following two questions

- ***Which tasks in general practices does the practice assistant have?***
- ***What characteristics of the practice assistant and of the practice are associated with the delegation of these tasks?***

METHOD

For our study we used data collected in 1994 in practice visits of 110 GPs in 88 practices Recruitment and selection of the study group and the method used have been described in earlier articles [13 14]

DISCUSSION

The inter-practice variation in the number of tasks of the practice assistant proved to be considerable This variation became apparent with this selection of indicators and with the dimensions constructed with these indicators Many GPs performed tasks themselves, for which currently qualified assistants are well trained The lack of a separate treatment room appears to be a major obstacle

Especially in practices with more partners and in urban practices assistants have more tasks Single-handed practices usually have only one assistant who is often absorbed by the telephone or by administrative duties, leaving hardly any opportunity for other tasks Dispensing practices work with dispenser's assistants, who have had a different training and are therefore insufficiently prepared to perform medical technical tasks For both types of practices (single-handed and dispensing) extension of the number of tasks of the assistant implies considerable organizational changes What deserves further analysis is why in rural, single-handed or dispensing practices that usually generate above-average incomes, much fewer tasks are delegated to the practice assistant

Practice size hardly appears to influence the number of delegated tasks The virtually absent association between the percentage of assistance per full-time GP and the number of delegated tasks could imply that more assistance does not automatically result in more tasks being delegated

The assistant has a considerable task in informing patients on diseases and complaints in 93% of the practices she gives advice by telephone and in 41% information on prevention In this respect practices also differ considerably as well as in the number of medical organizational tasks (care not directly related to patients prescriptions, referral cards, reminders, etc) Dispensing practices had the lowest score in this respect and training practices the highest The dimension of 'secretarial' tasks mainly concerns administrative care and hardly involves patient care

The fact that patients were satisfied with delegation is not so remarkable as the finding that patients were significantly more satisfied when tasks were delegated to a qualified practice assistant The patient apparently appreciates the difference in expertise

The discrepancy between assistants and GPs in their reporting of time in minutes spent on joint meetings (29 versus 44 min/week), reflects their difference in perception In practices with on average a large personal list size the number of minutes spent on joint meet-

ings as reported by the assistant was significantly lower than in practices with a smaller personal list size This association was not found for the time reported by the GPs Sprij et al also found that the larger the personal list size, the smaller - relatively and absolutely - the proportion of indirectly patient-related activities (e g time for joint meetings) which became activities to be trimmed at will [18]

In an analysis at practice level associations between practice assistant and individual GPs in practices with more partners are lost Therefore we performed a repeat analysis at GP-level (N=110) which revealed comparable results

The overrepresentation of rural practices in our study is largely an artefact many practices - located in villages near large urban agglomerations - can hardly be considered rural On the whole our population of GPs hardly deviates from the national population of GPs This is corroborated when the results are compared to the Dutch National Study of Morbidity and Intervention in general practice [11] There has been an increase in the number of qualified assistants (+ 17%), assistants with an employment contract (+ 14%) and with a separate treatment room (+ 10%) This could be indicative of progress in the professionalization of practice management Yet there has been little progress in the number of tasks delegated to the practice assistant This could also be a consequence of the omission of recommendations in all Dutch College Guidelines [19]

Tasks often performed by the assistant were blood sugar testing, making vaginal smears and nitrogen treatment of warts In recent years tasks have been stimulated strongly by professional organizations (NHG, LHV, NVDA, O&O)

The delegation-index of Nijland consisting of the first five indicators from table 1 proved to be useful in our study as well [6] Single-handed practices, practices without a separate treatment room for the assistant and rural practices scored significantly lower on the delegation-index, comparable to findings in the Dutch National Study of Morbidity and Intervention in general practice [5] We could not confirm the association between "having a qualified assistant' or 'the assistant having an employment contract" on the one hand and "medical technical tasks" on the other as found in previous studies This could be due to the increase in qualified assistants and/or assistants with an employment contract

The results of our study of the conditions for delegation of tasks to the practice assistant require further research What are bottlenecks in extending the number of tasks and in-

creased use of assistance, what are the consequences of this increased use of assistance for the practice organization - also financially - and what are possible benefits in quality and time? Also the possible role of the practice assistant in quality assurance and improvement requires further study in the Netherlands [20,21]. Especially interesting would be to know whether GPs would be more inclined to delegate more tasks to the practice assistant, if she were better trained for certain tasks like assisting in the guidance of patients with diabetes, with asthma/COPD or patients with a high risk of cardiovascular disease. If the GP exploited the possibilities of delegation, the practice could deliver better care more effectively and efficiently and the GP would have more time to address the needs perceived as relevant by the patient. The policy of the Dutch professional organization (LHV) to stimulate the training of practice assistants with extra training in management and patient care is a promising step forward to help the GP and to realise better quality of care.

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SERVICE AND ORGANIZATION IN GENERAL PRACTICE

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Table 1 **41 indicators of "Service and organization"; 19 questions for patients (15 patients per GP), 22 for GP and observer; 110 GPs (gp) in 88 practices (p); percentages yes-answers, number of minutes; indicators with an * are not part of a dimension**

Accessibility/availability (12 indicators)	
1. Waiting time before the patient is called in for consultation (gp)	11.2 ± 4.3 min
Accessibility (6 indicators)	
2. Waiting time before getting through to the practice by telephone (p)	4.6 ± 4.8 min
3. Patient approves of emergency service during office hours (p)	93%
4. Patient approves of the information on practice regulations (p)	91%
5. Patient approves of the on-call arrangements by the GP-group (p)	88%
6. Patient approves of the accessibility by telephone in emergencies (p)	83%
7. For small injuries the patient prefers practice to emergency department in the hospital (p)	72%
Organization of the surgeries/availability (5 indicators)	
8. Patient can consult his/her own GP by telephone the same day if requested (p)	94%
9. Patient has a say in the duration of the consultation (p)	78%
10. Patient wants a greater say in the organization of the practice (p)	11%
11. The patient reports to be hindered by the assistant in contacting his/her own GP (p)	10%
12. The patient often gets a different GP during office hours (p)	8%
13. * The patient misses (the service of) a free-flow consultation (p)	22%
Indicators of privacy	
1. * The patient can hear the conversation at the patient desk (p)	55%
2. * The patient reports overhearing snatches of the conversation in the consultation room (p)	9%
3. * The patient reports disturbances of the consultation by telephone calls (gp)	37%
Organization of patient information on diseases and complaints	
Use of patient information by the GP or in the practice (3 indicators)	
1. The patient approves of the patient information on diseases and complaints in the practice (gp)	76%
2. The patient reports to have got an explanation occasionally with a demo in the consultation (gp)	33%
3. The patient reports to have received a leaflet occasionally in the consultation (gp)	31%
Accessibility of patient information for the GP or patient (7 indicators)	
Leaflets are well stored and easily accessible (gp)	82%
Demo-model of the lumbar vertebral column is available (gp)	74%
Demo-plate of the abdominal organs is available (gp)	73%
A leaflet with a diet for constipation is available (gp)	70%
Leaflet on cardiovascular diseases is available (gp)	67%
Leaflet on low back ache is available (gp)	65%
Leaflet on acne is available (gp)	54%
* A leaflet with practice information is available for the patient (p)	68%
* Less than one third of the leaflets is provided by pharmaceutical companies (p)	52%
* The patient library contains more than five books (p)	25%
* The GP reports to have read the content of the leaflets he hands out (gp)	63%
* The frequency of GP handing out patient information leaflets per week is (gp)	4.2 ± 3.5 x/wk
Organization of preventive activities (9 indicators)	
There is a list of patients indicated for flu vaccination (p)	92%
The practice has a system for (re)calling patients indicated for a cervical smear (p)	90%
Patients indicated for flu vaccination are actively invited (p)	64%
There is a list of patients with DM (p)	55%
There is a recall system for patients who do not report for a preventive consultation (p)	24%
There is a sex-age register (p)	21%
There is a special surgery for DM patients (p)	19%
There is a register of patients with an increased cardiovascular risk (p)	18%
The practice identifies and monitors patients with an increased cardiovascular risk (p)	6%
The number of preventive consultations in the appointment book in the next three months (p)	5.7 ± 9.3

SERVICE/ORGANIZATION AND CHARACTERISTICS OF PRACTICE OR GP

• Association at practice level

Table 2 shows the association between characteristics of the practices and three dimensions. For each dimension the difference in sum score between a subgroup of GPs or practices and the average sumscore of the total group (110 GPs and 88 practices respectively) has been calculated. On the dimension of "accessibility", for example, the subgroup of single-handed practices scores .08 higher on average than the total group of 88 practices (average 4.28 ± .37); with p = .1 this association is not significant. The standard deviation and the range are shown to give an impression of the magnitude of the differences between scores.

Patients in rural practices, in practices with at least full-time assistance per fte GP and in practices with a small locum area had a more positive opinion on the accessibility. The organization of surgeries/availability was appreciated more positively in single-handed practices and less in dispensing practices. The score on "organization of preventive tasks" proved to be higher in training practices, and in practices with at least full-time assistance per fte GP, but lower in dispensing practices and in practices "at home". Together the characteristics explain a quarter till one third of the variance of these three dimensions.

For aspects of privacy (the desk or the consultation room being sound-proof) single-handed practices scored significantly higher than practices with more partners (p = .05, not in table).

Table 2: The association between "Service and organization" and characteristics of the practice. Linear regression (N=88)

	Practices N=88	Accessibility *6 indicators*		Organization of surgeries/availability *5 indicators*		Organization of preventive activities *9 indicators*	
Average scores + SD		**mean 4.28 ± .37**		**mean 1.49 ± .43**		**mean 3.9 ± 1.8**	
Range		**2.3 - 5.0**		**0 - 2.0**		**1-9**	
The practice:		difference	p	difference	p	difference	p
is single-handed	56%	+ .08	.1	+ .10	.02	+ .1	.7
is a rural practice	51%	+ .13	.01	+ .06	.1	+ .1	.7
has less than 2500 patients	50%	+ .04	.4	- .03	.5	+ .2	.3
is a training practice	7%	+ .01	.8	- .01	.9	+ .8	.05
has less than 40% private patients	59%	+ .03	.6	- .06	.1	+ .1	.6
is a dispensing practice	13%	- .08	.3	- .14	.04	- .9	.006
has at least full-time assistance per fte GP	57%	+ .13	.01	+ .02	.7	+ .5	.02
has > 15000 patients in locum area	50%	- .10	.05	- .06	.7	+ .06	.8
is at the GP's home	76%	- .07	.2	- .06	.2	- .5	.02
Total explained variance		**29%**		**20%**		**23%**	

- **Association at GP-level**

Table 3 shows the association between characteristics of GPs on the one hand and two dimensions and one indicator on the other. The waiting time before being called in for consultation was shorter for independently working (single-handed) GPs and longer for full-timers. The opinion of the patient on the use of patient information during the consultation proved to be more positive for full-time working GPs and more negative for single-handed GPs. Finally, GPs with at least full-time assistance per fte GP had a better organization of the patient information on diseases and complaints.

Characteristics of the assistant did not explain significant differences.

Table 3 The association between "Service and organization" and characteristics of the GP. Linear regression (N=110)

	GPs N=110	Waiting time before consultation *minutes/week*		Use of patient information by the GP *3 indicators*		Accessibility of patient information *7 indicators*	
Average scores + SD		**mean 11.2 ± 4.3**		**mean 1.40± .41**		**mean 4.8 ± 1.8**	
Range		**0-30 min.**		**0.35-2.43**		**0-7**	
The GP		difference	p	difference	p	difference	p
works single-handedly	48%	- 1.7	.0001	- .12	.007	- .3	.7
works in a rural practice	50%	- 1.1	.2	- .03	.5	0	.9
has less than 2500 patients	64%	- .7	.1	.00	1.0	- .2	.4
is a GP-trainer	7%	- .2	.8	+ .02	.8	+ .3	.4
is dispensing	13%	+ 1.2	.08	- .03	.6	0.0	1.0
works full-time	71%	+ 1.2	.02	+ .14	.006	+ .5	.03
did vocational training	73%	- .4	.4	+ .03	.5	+ .2	.3
has at least full-time assistance	56%	- .2	.7	+ .04	.4	+ .4	.05
Total explained variance		**20%**		**12%**		**13%**	

DISCUSSION

In general, the opinion of the patients on the accessibility/availability of the practice was quite positive; somewhat less positive was their opinion on their preference of the practice to the hospital in case of emergencies and on the accessibility of the practice in emergencies. The patient was also quite content with the granting of home visits and the duration of the consultation. There were large differences between GPs and practices in the use and in the accessibility of patient information on diseases and complaints and in the organization of preventive activities.

Except for these three dimensions also independent indicators showed large differences between GPs and practices. GPs varied in the number of disturbances during the consultation, for example, in running behind schedule and in the use of leaflets. Practices also

years working as practice assistant, number of hours working per week, qualified or not and employment contract or not Analyses were made both at GP-level and at practice level Linear regression analysis was used to find out how each characteristic was associated with the dimension score

RESULTS

Selection of indicators

Six of the 47 indicators from the questionnaire for the patient discriminated insufficiently between GPs or practices

- "the GP keeps up with his profession (98%),
- "the GP grants a request for a home visit the same day" (97%),
- 'hygiene in the practice is sufficient' (97%)
- the consultation time is sufficient (96%)
- 'information is dealt with confidentially (95%),
- the GP has delegated too many tasks to the assistant" (4 8%)

The frequencies for the remaining 41 indicators are given in table 1 Factor analysis largely confirmed the presupposed correlations between indicators of aspects of service and organization (see table 1) For each aspect indicators and dimensions will be discussed

Dimensions

The domain of organization of accessibility and availability" revealed two dimensions

- **Accessibility of the practice (6 indicators, $\alpha = .74$)**

This dimension reflects the opinion of the patient about the accessibility of the practice during the day, when on call for emergencies and for first aid The patients reported that they had to wait 4 6 minutes on average before getting through to the practice by telephone The accessibility by telephone in emergencies was approved of by 83% of the patients and of the emergency service during office hours by 93% of the patients For small injuries 72% of the patients preferred the practice to the emergency department in the hospital

- **Organization of the surgeries/availability (5 indicators, $\alpha = .60$)**

This dimension is an indication of the quality of organization of the surgeries or the availability of their own GP Of the patients 94% reported they could consult their GP by

telephone the same day if requested and 78% reported to have a say in the duration of the consultation Less than 10% reported to get a different GP too often during office hours and/or that the assistant was an obstacle in contacting their GP

Waiting time before being called in for consultation (11 minutes on average) was insufficiently associated with one of the two dimensions and can be seen as an independent indicator (indicator of the time the GP runs behind schedule) The indicator 'the GP is disturbed during the consultation" was an independent indicator and so were the two mutually strongly related indicators of the degree to which the practice was sound-proof (Pearson's correlation coefficient = 81)

In the domain of "Organization of patient information on diseases and complaints' we could also discern two dimensions

- **Use of patient information by the GP or in the practice (3 indicators, α =.55).**

This dimension is an indication of the GP s use of patient information in his consultation or practice Of the patients 76% reported to be satisfied about the patient information on diseases and complaints in the practice, 33% reported to have received a leaflet once during the consultation or to have got an explanation by means of a demo

- **Accessibility of patient information for the GP or patient (7 indicators, α = .64)**

This dimension refers to the availability and accessibility of patient information for the GP or the patient Of the GPs 82% had stored the leaflets well and easily accessible During the consultation two thirds of the GPs had a leaflet available with a diet for constipation and/or leaflets on cardiovascular diseases or low back ache The information recommended in the Dutch College Guideline on "Acne vulgaris' was within reach for half of the GPs

The remaining indicators chiefly concerned organizational aspects, which were insufficiently associated with the dimension

- **Organization of preventive activities (9 indicators, α = .61)**

This dimension is indicative of the organizational preconditions for preventive care in the practice In more than 90% of the practices a list of patients indicated for flu vaccination was available as well as a system for (re)calling patients indicated for a cervical smear The early detection and monitoring of patients with increased cardiovascular risk had been

organized in 6% of the practices The average "number of appointments for preventive consultations in the appointment book in the next three months" (question for the observer) was six This last indicator loaded insufficiently on the dimension

ABSTRACT

Objectives- To determine differences between practices in service and practice organization (delegated tasks excluded) and factors that could explain these differences

Design and setting- Sample survey, 110 GPs in 88 practices in the Netherlands in 1994

Main measures- Indicators were selected from a thesaurus validated in a consensus round among 40 GPs and experts and tested in a pilot study The indicators resulted in questionnaires for the patient, the GP and the visiting observer, which were part of the Visit Instrument to assess Practice management (VIP)

Results- 19 Questions (indicators) for the patient (averages per question of 15 questionnaires per GP) were discriminatory (between 5% and 95%) 10 in the GP's questionnaire and 12 in the list of the observer Factor analysis of the 41 indicators revealed five components of service and organization of service 1 Accessibility 2 Organization of surgeries/Availability 3 Use of patient information by the GP or in the practice 4 Accessibility of patient information for the GP or patient 5 Organization of preventive activities

All components showed marked variation on both indicators and dimensions, single-handed practices and practices having fewer patients when on call, scored higher on accessibility country practices scored higher on availability More than full-time assistance per GP scored higher on all components Single-handed GPs made patients wait less before entering the surgery but used less information material List size of the practice and vocational training did not explain any differences

Conclusion- The field of service and practice organization of the service was clearly established and showed marked variation between GPs and practices Patients provided useful information on important indicators of the service in addition to the information of the observer and the visited GP on the organization of services It was difficult to find discriminating indicators suggesting good service and practice organization

INTRODUCTION

The service to patients and the practice organization it requires are essential parts of good quality of care in general practice. In the Checklist of Practice Management [1] of the Dutch College for GPs (NHG) "service and organization" is defined as "the organization of service and care to patient (groups), apart from direct contact between GP and patient". Central aspects of service and organization are the reception in the practice, the accessibility/availability, the continuity in care and the exchange of information, the appointment system, patient information on diseases, complaints, information on the practice and the organization of preventive activities. On the relation between service and organization Pritchard remarks: "The efficiency and effectivity of the reception service reflect the philosophy and organization of the whole practice" [2].

A good service and organization could show to full advantage other aspects of care such as clinical performance or collaboration with colleagues[3]. Occupied telephone lines, long waiting times for making an appointment, no patient information available when required during the consultation or no list available of patients with Diabetes Mellitus theoretically do not exclude good care, but are nevertheless unwanted. It goes without saying that setting up and maintaining an adequate service and organization in general practice is not simple as exemplified by the implementation of prevention programs [4], which often do not get off the ground because of a weak organization.

Guidelines on the domain of service and organization in general practice are on the increase. They can be found in the different Guidelines of the Dutch College (primarily in the Guideline on "Accessibility and availability" [5]) as well as in other publications of our professional organizations, in the Dutch College Building Stones for practice management and in the recommendations for the organization of patient information and prevention.

This increase in guidelines is in line with the growing attention to service and patient satisfaction in various non-profit organizations [6]. Especially patients can give useful information on aspects of service and practice organization that could be improved [7].

A clear insight into the actual situation in this field is missing. This was reason for a further analysis of differences in service and organization between Dutch GPs and practices and of characteristics associated with these differences.

METHOD

For our study we used data collected in 1994 in practice visits of 110 GPs in 88 practices. Recruitment and selection of the study group, the method used and the analyses have been described in previous articles [8,9]. One of the chapters in the "Checklist of Practice Management" concerns service and organization [1]. Organizational aspects belonging to tasks of the practice assistant are part of the domain of "delegation and collaboration". They are not taken into consideration in this article.

Of the 260 aspects in the checklist concerning "service and organization" indicators were selected for the pilot study of 59 GPs. The selection was based on the Dutch College Guidelines, the Basic Job Description and indicators that in earlier studies had proved to discriminate between GPs and practices. The pilot study resulted in 47 indicators concerning service and organization [10], which were used in the practice visit method. The practice visit method consisted of a questionnaire for the patient with 25 questions, a questionnaire for the GP and for the practice assistant and a tally list for the observer. The questionnaire for the patient was handed out to 15 patients visiting the surgery, who were asked to put their completed questionnaire in a special box. The answering categories for the questions were 'yes/no' or 'time in minutes'.

ANALYSIS

A first step was to determine the frequency of each indicator. Indicators that discriminated insufficiently between GPs and practices (< 5% or >95%) were left out of the analyses. The analyses were at GP or at practice level, dependent on whether an aspect concerned the whole practice or the individual GP. For the score at practice level we used the answer of the GP with the highest percentage of fte. The average score on each question in the 15 patient questionnaires counted as the average for that GP or practice.

Subsequently we used factor analysis of the scores of the indicators to identify dimensions in service and organization. A factor load > .40 was required for an indicator to be included in a dimension. For each dimension the sum score, standard deviation and Cronbach's alpha were calculated. The sum scores of the dimensions were used as dependent variables to analyse how service and organization were associated with characteristics of practice, GP or practice assistant (independent variables).

Partly on the basis of previous studies [11,12] we selected 9 characteristics of the practice and 8 characteristics of the GP. Characteristics of the practice assistant were: number of

differed in the time the patient needed before getting through to the practice by telephone or in the availability of a leaflet with practice information GP and practice characteristics determined service and organization' more than characteristics of the assistant did

Practices with less than 15000 patients in their locum group and rural practices scored higher on accessibility Although the smaller scale and overall better satisfaction in rural areas could well be an explanation, it is apparently more difficult for a large locum group and for urban practices to realize a comparable accessibility

The association between more assistance and good accessibility may well have its origin in their contribution to good accessibility during office hours

GPs who worked full-time but especially GPs in practices with more partners more often ran behind schedule and had a lower score on the dimension of 'organization of the surgeries/availability' A possible explanation is that health centres and practices with more partners and - often part-time working - practice assistants have more organizational problems

Use of patient information by the GP or in the practice scored higher in practices with more partners, even though the patient information was hardly more available or accessible More assistance in the practice may well be associated with a better organization of patient information on diseases and complaints in the practice, but patient information somewhere in the building apparently does not guarantee its proper use

Organization of preventive activities scored higher in practices with a GP-trainer or with at least full-time assistance per fte GP GP-trainers are expected to be forerunners and in this respect seem to come up to these expectations The association with extra assistance may also be obvious, but has not been demonstrated before [4] Having a dispensing practice or practice at home is clearly not associated with a good organization of preventive activities

Although our study was not primarily meant to be extrapolated towards the Dutch GP in general, the GPs in our study could well be compared to the average Dutch GP in most respects (sex year of establishment, vocational training, member of the Dutch College percentage of private patients, characteristics of the practice assistant) The study included fewer GPs from single-handed practices and more from rural practices [12]

It was difficult to find good indicators with sufficient dispersion in our study, because the Dutch GP already meets most of the basic guidelines for adequate service and organ-

ization. Many aspects of service and organization are missing, because they either scored nearly 100% in the pilot study or could be expected not to discriminate between GPs or practices. A judgement on the quality of service and organization is therefore hardly possible on the basis of these data. But the results hold up a mirror to the GP reflecting his practice management. It is his decision to determine whether 4.6 minutes waiting time for the telephone or 11 minutes for a consultation is acceptable or whether the presence of leaflets for patient information is all that important. The feedback is not totally value-free, because e.g the fact that practices with at least full-time assistance per fte GP have a higher score on most dimensions and list size hardly matters for that score, are strong arguments for extra investment in practice assistance and less in list size reduction.

Some other aspects of service and organization have not been taken into account either. It turned out to be difficult to assess the organization of the repeat-prescription (the process) or the process of delivery and handling of urinary samples, because these processes are difficult to X-ray in a practice visit [13].

There are quite a few publications on consultation time, but only occassionally on the waiting time before consultation as experienced by the patient. In the UK Heaney et al reported an average waiting time of about 14 minutes [14]. That is more than the 11 minutes in our study, but the 14 minutes were actually recorded and not reported by patients. A short waiting time is considered as service but it has a relatively low priority for the patient [15]

The dimension of "organization of preventive activities" records directly visible items regarding prevention in the practice. The quality of the organization of preventive activities has been analysed by Van Drenth et al [4] in their study on the effect of using prevention facilitators. In that study they had to formulate their own guidelines for the evaluation of improvements in the organization of prevention, because guidelines were not available. As the task of the GP in prevention gradually becomes clearer, hopefully guidelines for the necessary organizational setting will follow. If that were the case, a dimension of "organization of preventive activities" based on these guidelines would provide extra information on the quality of prevention next to outcome data and chart audit on preventive action.

Perhaps the most important finding in this study was that patients from practices with more partners were less content with the service, except for the use of patient information during the consultation or in the practice. Baker & Streatfield's [16] findings in the UK were

comparable They warned for a decrease in satisfaction when practices increase in scale. Another important finding is that single-handed practices assessed with the VIP scored higher on service, but lower on nearly all remaining aspects of practice management, like equipment [8], delegation and collaboration [9], patient information and record keeping [10] More research on the consequences of differences in service and organization is recommended

•Workload per week (core activities plus optional activities)

On average the number of hours spent on core activities was more than 50 hours per week; including the optional activities (such as deliveries, examinations of patients or sidelines) the total workload was more than 53 hours per week; that is an average of 4 hours more than the time the GPs reported they wanted to work. Of the full-time working GPs 75% worked more than 48 hours and 25% more than 58 hours per week.

Table 1 Workload of GPs who worked 90% or more in hours per week (N=76)

Primary activities (based on the appointment book)			
Consultations and telephone calls to patients		21.1 ± 6.6	
Free-flow consultation hours		2.9 ± 3.6	
Home visits		9.0 ± 4.2	
Total number of hours spent on primary activities			**33.0 ± 6.5***
Secondary activities			
Documentation, record keeping and telephone calls		4.7 ± 2.8	
Financial administration		1.1 ± 1.4	
Hours on call		5.3 ± 2.1	
Time spent on collaboration with other care providers (minutes/week)			
- Consultation time with colleagues	49.7 ± 26.7		
- Total consultation time in primary care	53.9 ± 32.1		
- Consultation time with consultants/hospital	19.0 ± 11.7		
- Consultation time with practice assistant	43.9 ± 37.6		
Total patient-bound consultation time (hours/week)		= 2.8 ± 6.6	
Total number of hours spent on secondary activities			**13.7 ± 3.9***
Tertiary activities			**2.6 ± 1.3**
Quaternary activities			**0.9 ± 0.8**
Total workload in the practice (core activities)			**50.2 ± 8.0**
Optional activities			3.0 ± 9.1
Total workload in one week			**53.2 ±10.1**
Desired workload			49.4 ± 9.5

* Due to missing values the totals of the average do not agree with the calculated total

Table 2 shows the scores of the total group on the scales for experienced job stress. The differences with the scores of the participants of the Dutch National Survey of Morbidity and Intervention in general practice are not significant.

Table 2 Data on job stress in the VIP-study (1994, N=110) compared to the study of NIVEL (1989, N=270)

	VIP	NIVEL
Job satisfaction (pleasure, interest, commitment)(lower score = more satisfaction)	7.9 ± 2.6	8.6 ± 2.7
Satisfied with available time for practice management (lower score = more satisfaction)	13.9 ± 3.3	14.9 ± 3.4
Costs vs benefits (lower score = more satisfaction)	7.9 ± 1.9	7.9 ± 2.6
Experienced workload (lower score = higher workload)	66.3 ± 8.8	62.6 ± 11.5
Experiencing inappropriate demands by patients (lower score = more inappropr. demands)	11.1 ± 2.8	10.0 ± 2.6

WORKLOAD AND JOB STRESS AND CHARACTERISTICS OF THE GP

We could not demonstrate an association between characteristics of the assistant and workload of the GP. Tables 3 and 4 show the associations between indicators of workload and job stress and characteristics of the GP.

• Workload and characteristics of the GP

Type of practice (single-handed versus partnership/association, salary-paid GP) did not reveal a difference in time spent on each separate activity or the total per week. The extra time spent on primary and secondary activities by GPs with larger practices was not significant. However, it turned out that GPs in rural practices spent significantly less time on primary activities. GPs with a small locum area as well as practices with less than 40% private patients spent significantly more time on primary activities.

As for secondary activities, time spent on duties was not associated significantly with any characteristic of the GP. The extra time GP-trainers spent on secondary activities can mostly be attributed to patient-bound consultation time with the practice assistant and with other disciplines.

GPs working in rural practices appeared to spend more time on tertiary activities as well as on quaternary activities. Also (younger) GPs, who did vocational training and GPs with a large locum area (and less frequent duties) spent more time on quaternary activities.

On average the total time spent on practice activities per week was 2.1 hours higher for GPs with more than 2500 patients ($p=0.03$). GPs with less than 40% private patients worked significantly more hours, just like GPs with a small locum area. Analyses showed that the

extra workload for a small locum area could not be attributed to the extra hours on call. When optional activities were included, GP-trainers also appeared to work significantly more hours per week (not included in table). The explained variance of all indicators was between 18 and 27%.

Table 3 The association between "Workload" of GPs working ≥90% in hours per week and characteristics of the GP. Linear regression (N=76)

	GPs working ≥ 90%	Primary activities (hrs/wk)		Secondary activities (hrs/wk)		Tertiary activities (hrs/wk)		Quaternary activities (hrs/wk)		Total practice activities (core) (hrs/wk)	
Average scores ± SD	**N=76**	**33.0 ± 7.0**		**13.5 ± 4.1**		**2.6 ± 1.3**		**0.9 ± .8**		**50.2 ± 8.0**	
Range		**18.0 - 73.0 hrs**		**5.1 - 23.0 hrs**		**0.8 - 9.0 hrs**		**0.0 - 5.0 hrs**		**36.0 - 74.4 hrs**	
The GP		diff.	p	diff.	p	diff.	p	diff.	p	diff.	p
works single-handedly	60%	- .2	.8	+ .3	.5	- .2	.2	+ .05	.5	0	1.0
works in a rural practice	58%	-2.0	.03	- .4	.5	+ .3	.04	+ .2	.01	-1.8	.08
has less than 2500 patients	46%	-1.4	.1	- .5	.3	0	1.0	- .2	.07	-2.1	.03
is a GP-trainer	8%	- .8	.6	+2.4	.01	+ .2	.4	+ .01	.9	+1.8	.3
has less than 40% private patients	61%	+1.8	.05	+ .2	.8	- .1	.6	+ .2	.1	+2.0	.04
did vocational training	66%	- .4	.6	- .7	.1	+ .2	.2	+ .2	.03	-1.7	.5
has at least full-time assistance	62%	1.1	.2	- .5	.3	- .2	.2	+ .01	.9	-1.6	.1
has > 15000 patients in locum area	62%	-2.9	.004	0	1.0	- .1	.7	+ .3	.02	-2.9	.01
as a practice at home	53%	+ .2	.8	- .9	.08	+ .1	.5	0.0	.9	-0.7	.5
Total explained variance		**18%**		**18%**		**19%**		**27%**		**22%**	

- **Job stress and characteristics of the GP**

GPs who did vocational training worked with more satisfaction (pleasure, commitment and interest). GPs with practice at home were more satisfied with their available time for practice management than GPs working outdoors and they experienced less workload. 'Experiencing inappropriate demands by patients' was hardly associated with GP-characteristics. Single-handed GPs reported more job satisfaction than GPs working in practices with more partners.

Table 4 The association between "Job stress" and characteristics of the GP
+ = more; - =less, Linear regression (N=110)

Average scores	GPs N=110	Job satisfaction 4 items mean 8.0±2.6		Satisfied with available time 5 items mean 13.9±3.3		Cost- benefit relation 3 items mean 7.9±1.9		Experienced workload 16 items mean 66.3±8.8		Inappropriate demands of patients 4 items mean 11.1±2.8	
The GP		diff.	p	diff.	p	diff.	p	diff.	p	diff.	p
works single-handedly	48%	- .5	.1	+ .2	.6	+ .4	.05	- .6	.6	- .5	.1
works in a rural practice	50%	+ .1	.7	- .1	.8	+ .2	.4	- .8	.4	- .3	.4
has less than 2500 patients	64%	- .3	.4	+ .3	.4	+ .1	.8	+ .6	.7	- .3	.3
is a GP-trainer	7%	- .1	.8	- .1	.8	+ .5	.2	+ .3	.9	- .4	.4
has < 40% private patients	55%	0	.9	- .1	.7	+ .1	.6	- 1.6	.09	0.0	1.0
did vocational training	73%	+ .7	.03	- .4	.3	+ .1	.5	- 1.4	.2	+ .1	.6
has at least full-time assistance	56%	+ .1	.8	+ .3	.3	- .2	.3	+1.0	.3	- .1	.8
>15000 patients in locum area	49%	+ .2	.6	+ .1	.7	+ .3	.1	+ .5	.6	- .5	.1
has a practice at home	43%	+ .1	.8	+ .8	.05	+ .3	.2	- 2.6	.02	0.0	.9
works full-time (≥90%)	67%	+ .1	.8	- .8	.07	+ .1	.6	- .4	.8	- .1	.8
is female	21%	+ .1	.8	+ .2	.7	+ .4	.2	- .3	.9	0.0	.9
Total explained variance		**10%**		**15%**		**14%**		**16%**		**7%**	

- **Correlations between workload and job stress**

Table 5 shows the correlations between workload in hours per week and job stress. GPs with many primary and secondary activities and with a large total workload per week were less satisfied with the available time for practice management. GPs with many quaternary activities experienced less workload.

Table 5 Correlations between workload and job stress of GPs.
+ = more; - = less; Pearson's correlations and their significance (N= 76)

Workload	Primary activities		Secondary activities		Tertiary activities		Quaternary activities		Total practice activities	
Job stress	Pearson	p	Pearson	p	Pearson	p	Pearson	p	Pearson	p
More satisfaction with the job	- .20	.09	+ .08	.5	+ .11	.4	+ .13	.3	- .10	.4
More satisfied with available time	- .30	.01	- .26	.02	- .006	1.0	+ .04	.7	- .39	.0005
More costs vs benefits	+ .12	.3	+ .03	.8	+ .07	.6	+ .02	.9	+ .12	.3
More experienced workload	- .07	.5	+ .06	.6	- .13	.3	- .26	.03	- .08	.5
Experiencing inappropriate demands	- .09	.4	0.0	1.0	+ .08	.4	- .07	.5	- .07	.6

DISCUSSION

The instruments used in this study help to get a better idea of the use of time, the workload and the job stress of the GPs. There is a remarkable variation between GPs. Also remarkable is the considerable number of hours spent on primary activities by full-time working GPs: about 7 hours per day.

activities, being a member of a board, representation, having dinner with colleagues.

For the calculation of the time spent on primary activities the observer used the appointment book; at the same time the GP was asked to report on his use of time for primary activities to find out the agreement with the score of the observer. For the remaining activities we used the time reported by the GP. The number of hours spent on core activities was considered an indicator of the total workload in the practice. By adding the time spent on optional activities an approximation of the total workload was obtained.

We also asked the number of hours the GP would like to work (desired workload). For the calculation of the time on call, the working-hours reported by the GP (real working-hours) have been added to an equivalent in working-hours for the time the GP is available (the number of hours granted for availability in the collective agreement for salary-paid GPs is half an hour per evening, half an hour per night and two hours per weekend day).

JOB STRESS

To measure the subjectively experienced job stress, existing scales with proven validity and reliability were used. This concerns:

- job satisfaction: pleasure, interest, commitment (4 items, $\alpha = .72$);
- satisfaction with the availability of time for practice management (5 items, $\alpha = .76$);
- experienced discrepancy between investment and reward (cost-benefit relation) (3 items, $\alpha = .74$);
- experienced workload: the feeling at the end of a working day (16 items, $\alpha = .93$);
- experiencing inappropriate demands by the patients, matters for which the patient does not need to consult the GP (4 items, $\alpha = .67$)[5].

To get an impression of the representativeness of the study group, the scores on these five scales have been compared with scores of the participants of the Dutch National Survey of Morbidity and Intervention in general practice.

ANALYSIS

The analyses were performed at GP-level. The averages for workload have only been calculated for the 76 GPs that reported to work 'full-time' (≥90%). The workload of part-time GPs has not been analysed due to methodical problems and because a part-time GP plans his time quite differently from a full-time GP. We did not analyse for sex differences either, because the group of full-time working GPs only counted three female GPs.

The experienced job stress has been analysed for the 76 full-time GPs as well as for the total group Linear regression analysis was used to determine the contribution of the characteristics of the GP and the practice assistant to the scores on workload and experienced job stress To analyse the experienced job stress of the total group the characteristic 'working full-time or not' was added

To study the association between workload and experienced job stress Pearson's correlation coefficients were calculated for the full-time working GPs

RESULTS

The 76 GPs (of which three were female) reporting to be working 90% or more, had an average number of 2,515 patients For the remaining characteristics this group did not differ considerably from the total group

INDICATORS

Table 1 gives an impression of the workload of the full-time working GPs The variables for workload had a normal distribution

- **Primary activities**

These GPs spent an average of 24 hours per week on consultations, telephone calls to patients and free-flow consultation hours, and 9 hours per week on home visits (5-6 home visits per day, 20 minutes being the norm for a home visit) 33 hours in all This comes down to somewhat less than 7 hours per working day The GPs themselves reported a little more than 7 hours per working day (36 5 hours per week)

- **Secondary activities**

On average these GPs spent less than one hour per day on documentation, record keeping and telephone calls, somewhat more than one hour per day on call and somewhat more than half an hour per day on consultation with other care providers

- **Tertiary and quaternary activities**

The time spent on quality improvement was estimated at an average of 2 6 hours per week and an average of 0 9 hours per week for non-professional activities

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WORKLOAD AND EXPERIENCED JOB STRESS OF THE GP

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ABSTRACT

Objectives- To determine differences between general practitioners in workload and job stress, factors that could explain these differences and the relationship between workload and job stress.

Design and setting- Sample survey; 110 GPs (76 working full-time) in 88 practices in the Netherlands in 1994.

Main measures- Workload in time (hours per week) and job stress on 5 existing scales. Questionnaires for the GP and the visiting observer were part of the Visit Instrument to assess Practice management (VIP).

Results- The total workload per week was 53 hours, 50 hours for core activities and 3 for optional activities. As many as 33 hours per week or nearly 7 hours per day were spent on direct patient contact. Type of practice (single-handed or group) nor characteristics of the practice assistant made any difference for the workload or job stress. If GPs had a rural practice, more private patients, a small practice and/or practice at home, this resulted in less workload. Our characteristics of the GP explained about 20% of the variance and even less of the job stress.

Conclusion- Different (more personal) factors may explain differences in workload and job stress. Further research into these factors is recommended.

INTRODUCTION

Lack of time and job stress are often reported by GPs to be the main impediments for good practice management, this is especially true for the realization of matters that require investment of time, such as delegation of tasks, introduction of prevention, consultation with colleagues, reorganizations in the practice, introduction of protocols for the practice assistant and designing a practice leaflet To gain insight into one's own workload and job stress – also in relation to the workload and job stress of colleagues – would for that reason be a first logical step towards improvement of practice management

This led to our study questions

- *Which differences exist between GPs in objective workload and subjectively experienced job stress?*
- *What characteristics of the GP and the practice assistant are associated with these differences?*
- *How does objective workload associate with subjectively experienced job stress?*

METHOD

For our study we used data collected in practice visits of 110 GPs in 88 practices Recruitment and selection of the study group, the method used and the analyses have been described in Huisarts en Wetenschap [1 2 3 4]

WORKLOAD

The Visit Instrument to assess Practice management (VIP) included an instrument to assess the objective workload of the GP [1] A distinction was made between core activities and optional activities Core activities are part of daily practice management, optional activities are individual choices (physical examinations (of patients), health check-ups, well-baby clinic, alternative medicine, research, obstetrics, sidelines)

Core activities can be divided into four categories

- primary activities, directly related to patients consultations, home visits, telephone calls to patients,
- secondary activities, indirectly related to patients registration of medical information, telephone calls on patients, financial administration, on call duties and (patient-bound) meetings,
- tertiary activities, not related to patients, but to (quality of) care postgraduate training, quality improvement activities,
- quaternary activities, not related to patients or to (quality of) care non-professional

An average workload of 53 hours per week is no less than 15 hours out of line with the Dutch working week for salaried employees. However, the GP works only 4 hours more than the 49 hours per week he says he wants to work.

The variation in workload of about 10 hours per week is remarkable as well. A rural practice with many private patients, a practice at home and being part of a large locum area may be a perfect prescription for low workload and job stress (which does not indicate a causal relation). Characteristics of the assistant and the percentage of practice assistance, the practice size and 'working single-handedly or not' explained only little variation in workload and job stress. More practice assistance, a smaller practice or another practice setting are not necessarily solutions for GPs who experience high workload or job stress. The workload in hours per week and experienced job stress were hardly associated. Apparently time (working more hours) contributes only partly to job stress. Workload and job stress appear to be largely determined by other factors, like strong inter-personal differences in return appointments[6,7] and working style [8], professional attitude and personality factors. Also differences between practices such as practice culture, role concepts and team spirit, probably explain more variance than the characteristics in our study.

The weak relation between practice size and workload demonstrated in previous studies [9] appeared to be just only significant in our study. Practice size does not seem to be a good "proxy" for workload.

Younger GPs who did vocational training spent less hours on primary and secondary activities and more hours on tertiary and quaternary activities. For them the difference between actual and desired workload was less evident. They also experienced more pleasure, commitment and interest than GPs without vocational training, though this difference could be explained by age. The job stress is less for GPs who have their practice at home (they made significantly more home visits), especially the aspects of 'satisfaction with available time for practice management' and 'experienced workload'. Practice at home is probably more inconvenient for the other members of the family than for the GP, who might experience relief from the freedom of movement and autonomy as well as the reduced travelling and consultation time.

The GPs in our study could well be compared to the average Dutch GPs (sex, year of establishment, vocational training, member of Dutch College, percentage of private patients, characteristics of the practice assistant). The study included fewer single-handed

practices (44% vs 54% nationally) and rural practices were overrepresented (50% vs 11% nationally) [10] This also holds for the 76 GPs reporting to work 90% or more The fact that 96% of the full-timers were men (contrary to the 79% men in the study group of 110 GPs) is a restriction of our study and so is the selection of participating GPs After all, they had sufficient energy to participate in practice visits and belonged to an enterprising selection of GPs, which explains the slightly more relaxed scores on job stress (not significant) of observed GPs compared to the NIVEL-study [9]

Another restriction is that the use of time is only calculated for the 76 GPs working 90% or more Comparing our results with a comparable group of male full-time working GPs in another NIVEL-study on part-time working doctors [11] indicates that the total number of working hours per week measured with the VIP is low The male full-time GP in the NIVEL-study spent an average of 38 5 hours on primary activities compared to 33 hours per week in the VIP measured by the observer and 36 5 hours reported by the GP himself This difference of 5 hours (3 hours of surgery, 2 hours of home visits) persists in the total workload per week and can be attributed to the calculation of primary activities from the appointment book in the VIP, which does not include running behind schedule and disturbances The difference cannot be explained by differences between the study groups

The importance of studies on workload and experienced job stress of GPs is mainly felt in countries with capitation payment or fixed salaries for GPs [12 13] In such a system GPs may want to do more work in the same time than when paid on a fee-for-service base [14 15 16] Comparison of the Dutch situation with these countries is therefore of limited value The studies on workload and job stress in the United Kingdom and the United States use different indicators each time [17 18] (number of consultations and home visits [19], consultation time [20 21] working time in the practice [22], hours of postgraduate training and administration [23]) There are differences in definition and method of data collection, which sometimes lead to conflicting results The lack of a valid and especially usable instrument for the determination of workload and job stress [22] is also felt outside the Netherlands Consultation time – a frequently used measure for workload in the Anglo-Saxon literature – depends more on what happens during the consultation than on workload or practice size [21] and it has drawbacks as a measure for workload because GPs often do all sorts of activities in between such as telephone calls, or they sometimes have delegated parts of the consultation [24]

could be less intrusive, more formal, better substantiated, more feasible and more cost-effective [18].

It may well be the program rather than the content of a practice visit that determines its success. This study sets out to answer how practice visits are evaluated, how feasible they are, what change they bring about and whether two prevailing programs: practice visits by peers and by non-physician observers, differ in these respects.

METHOD

THE STUDY DESIGN AND PARTICIPANTS

In a prospective randomized intervention study (box 1) GPs and their practices were visited and revisited after one year with the same validated practice visit method [19] (VIP [A]). Two different interventions or programs of practice visits were compared: 'Assessment in mutual practice visits by a peer' (a colleague or peer does the visit, gives feedback and in his turn is visited by another colleague of the GP-group) versus 'assessment in a practice visit with feedback by a non-physician (external, trained, non-clinical) observer' [B]. In both programs the GPs met with their local GP-group after all visits had been performed, to discuss their experiences and the results and make plans for changes during a meeting of about two hours.

Box 1: Study design

Condition	T 0	Intervention	T 1 (after 1 yr)
Visit by a peer GP	assessment using the VIP	feedback by a peer (1 hour), a practice visit to another colleague + 2 hours of discussion in the GP-group	practice visit with the VIP
Visit by a non-physician observer	assessment using the VIP	feedback by a non-physician, trained observer (1hour) + 2 hours of discussion in the GP-group	practice visit with the VIP

We invited 15 local GP-groups - teams of GPs sharing responsibilities for care and continuity and taking care of CME and audit - with a total of 109 GPs to participate in the study. Recruitment implied advertising in medical journals or during postgraduate courses and approaching key persons in the profession as well as representatives of GP-groups. The GP-groups applied at intervals of 1-4 weeks. On application the GP-groups were ran-

A VIP: Visit Instrument to assess Practice management and organization is a Dutch instrument

B The non-physician observers in our project were experienced practice assistants/nurses trained as facilitator

domly assigned to either program - mutual visit by peers or a visit by a non-physician observer - and stratified for the following GP-characteristics: working full-time or part-time, being a member of the Dutch College of GPs or not, single-handed or not, being a GP-trainer or not and practising in a rural or urban area.

INSTRUMENTS AND VARIABLES

The practice visit method (VIP, see also box 2) was developed in a consensus study with 40 GPs and tested in a pilot study with 59 GPs, who visited each other's practices. It consists of instruments for data collection (a questionnaire for the GP and one for his/her nearest assistant, 30 questionnaires for patients and a tally list for the observer), a program for the visit and a prestructured feedback report. Feedback in the report implied comparison of individual GP/practice scores to a large representative sample of 110 GPs in 88 practices [20] as well as histograms to visualize the score. The GP discussed the feedback report either with a peer or with a non-physician observer in a one-hour meeting. It was recommended to the GP to discuss the report with the participants in the practice at a later moment.

Box 2: The two programs of the practice visit, visits by peers and non-physician observers

Before the visit (½ *hour* - 1 *hour*)
- Introduction; setting of date and time
- The participants receive the manual with the questionnaires
- The assistant hands out 30 patient questionnaires to patients waiting for consultation
- Questionnaires for the GP and assistant and 30 patient questionnaires are completed and sent to the observer
- Observer (or secretary) makes the provisional feedback report with the first data

On the day of the visit (4-5 *hours for the observer*, 1-2 *hours for the participant*)
- Arrival of the observer on the arranged date
- The colleague or the non-physician observer completes the feedback report with the collected data
- The colleague or the non-physician observer asks the GP to comment on the visit and the feedback report
- The colleague or the non-physician observer discusses the conclusions with the GP (1 *hour*)
- An action list is made for quality improvement in practice management
- Both observer and GP fill out an evaluation form

After completion of all observations in a group
- The GPs meet to evaluate the results of each participant in the group

To evaluate the feasibility of the two programs (see table 1) the GP was invited after each practice visit, to answer questions in a written questionnaire on ***appreciation*** (e.g. to what extent did the GP like the method, find the feedback clear, pleasant, etc. (7 questions, α = .72)); questions on ***acceptance*** (e.g. to what extent is the visit a burden, does it pose a threat to the assistant or GP, etc. (4 questions, α = .67)); questions on ***reported change*** (e.g. was the

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ally visiting GPs. More GPs visited by a non-physician observer would recommend such a visit to all other GPs (78% vs 68%) also giving higher marks for the extent of recognition of their own practice management in the feedback than GPs visited by a peer.

Table 1 Opinions of the GPs on appreciation, acceptance, change and on the quality of the feedback (Percentages 1 or 2 on 5-point Likert scale; N=74). Mutual visits by peers vs non-physician observers

		Peer N=32 (totally) agree %	Non-physician observer N=42 (totally) agree %
Appreciation of the practice visit by the GPs	**Averages**	**64**	**78****
The objectives of the VIP are clear		84	93
The feedback in the VIP is systematic and clear		65	79
It is the best way for assessing practice management		27	44
The practice visit was not unpleasant		62	100***
The feedback was a good reflection of my practice management		97	93
I recognize my practice management in the opinion of patients		45	56
I would recommend the VIP to all GPs		68	78*
Acceptance of the practice visit by the GPs	**Averages**	**9**	**9**
The practice visit is a burden for the practice		9	7
The practice visit is a threat to my assistant		0	5
The practice visit is a threat to me		3	2
The patient questionnaire is not so useful for the feedback		23	20
Reported change by the GPs:	**Averages**	**53**	**52**
The practice visit was instructive		78	88
The practice visit resulted in clear plans for change		65	61
The discussion on the feedback hardly contributed to my insight		32	30
The personal opinion of the observer contributed to my insight		36	28
The GP recognized his management in the feedback of:	**Averages**	**68**	**82****
Premises and equipment		94	95
Delegation and collaboration		66	74
Service and organization		69	86
Record keeping		72	86
Organization of quality improvement		38	69**
Workload and job stress		66	83

Significance of the difference * $p \leq 05$; ** $p \leq .01$; *** $p \leq .001$ (Wilcoxon test)

After one year GPs and practices had changed significantly on the majority of dimensions (table 2). Only the organization of surgeries/availability as perceived by the patient scored lower after a year. Important changes were seen for the aspects: premises and equipment, number of tasks delegated to the practice assistant, collaboration with other care providers, organization of information and prevention, specific aspects of record keeping,

ABSTRACT

Objective- To evaluate and compare the feasibility and effects of practice visits, more specifically two programs of assessment of practice management in a practice visit mutual visits and feedback by peers compared with visits and feedback by trained, external, non-physician observers

Design- Randomized intervention study with the two programs, follow-up after one year

Setting- General practices in the Netherlands in 1993 and 1994

Subjects- 90 GPs in 68 practices

Main measures- Scores on indicators and dimensions of practice management in the VIP (a validated Dutch method to assess practice management in a practice visit) appreciation, acceptance reported change of the participants and recognition of their own style of practice management in the feedback, using a five-point Likert scale to evaluate both programs mutual visits by peers or visits by non-physician observers To measure change we determined differences in scores on 208 indicators and on 33 dimensions of practice management between the first visit and the visit after one year

Results- Data of 46 mutual visits by peers were compared with data related to 44 visits by non-physician observers A visit by a non-physician observer was appreciated significantly better, but both programs differed little in 'acceptance' by the GP and in 'reported change' After a year there was a significant overall improvement in the majority of aspects of practice management Improvement was clearly more noticeable after peer visits, especially related to equipment, hygiene, the content of the doctor's bag and record keeping

Conclusion- In this first study on the feasibility and effectiveness of practice visits, significant improvements were found for many aspects of practice management, especially after mutual practice visits by peers The GP may have a more effective role in the observation of a peer, yet data collection and giving feedback by a non-physician observer are better appreciated

Keywords- practice visit, practice management, educational assessment

Table 2 Change in practice management after a year. All 81 GPs, GPs of mutual visits, GPs visited by a non-physician observer and the difference between both methods

MAIN CHAPTERS & Dimensions in practice management (implying 179 of the 208 indicators) (p) = practice level, no mark = GP-level	level	All GPs % change N=81	Peer % change N = 41	Non-physician observer % change N = 40	Difference between methods (p =)
I PREMISES AND EQUIPMENT(45)					
Equipment in treatment/examination room and lab (14)	p	3	8 *	- 1	n.s.
Hygiene (8)	p	5	13 (*)	- 1	.05
Use by GP of equipment, diagnostics and therapeutics (12)		11 ***	7 *	14 ***	n.s.
Content of the doctor's bag (11)		11 **	25 ***	- 3	.05
II DELEGATION AND COLLABORATION (57)					
Medical technical tasks delegated to assistant (9)	p	21 ***	19 *	22 **	n.s.
Laboratory tasks delegated to assistant(4)	p	- 7	-22	6	n.s.
Informing patients on diseases by the assistant (3)	p	2	- 5	7	n.s.
Medical organizational tasks delegated to assistant (4)	p	7 (*)	11 (*)	3	n.s.
Secretarial tasks delegated to assistant (5)	p	12 (*)	17 (*)	8	n.s.
Collaboration with colleagues (GP-group) (12)	p	3	12 *	- 5	.05
Collaboration with partners in primary care (5)	p	- 1	1	- 3	n.s.
Collaboration with partners in secondary care/hospital (7)	p	1	4	- 2	.001
Collab. with homes for elderly + other care providers (8)	p	21	36 **	10	.01
III SERVICE AND ORGANIZATION (30)					
Accessibility (patient Q, 6)	p	- 1	- 2	0.3	n.s.
Organization of surgeries/availability (patient Q, 5)	p	- 7 *	- 3	- 9 **	n.s.
Use of patient information on disease by GP (patient Q, 3)		6 *	7 *	5	n.s.
Accessibility of patient information for GP or patient (7)		8 (*)	24 ***	- 6	.05
Organization of preventive activities (9)	p	9 *	10 (*)	8	n.s.
IV RECORD KEEPING (20)					
Recording using the SOAP-system (4)		12 ***	18 ***	6	.01
Recording of prescriptions (4)		20 ***	28 ***	12	.01
Basic data or list of problems/illnesses (5)		45 ***	72 ***	17	.01
Extent of use of records by GP (3)		8	- 10	22 **	.05
Level of computerization of medical records (4)	p	20 **	21 *	19 *	n.s.
V ORGANIZATION OF QUALITY IMPROVEMENT (9)					
Assessment on outcome and a year report (6)	p	9 *	11	9 (*)	n.s.
Quality Improvement (audit, reading,education; 2h/wk)(3)		- 4	- 3	- 6	n.s.
VI WORKLOAD AND JOB STRESS (18)					
Workload (- = less time) (13)					
Consultations (surgery, visits, tel calls to pats; 35 h/wk)		2	5	0.3	n.s.
Indirect patient care (admin., duty, meetings; 14 h/wk)		- 7 *	- 4	-10 *	n.s.
Meetings (professional, administrative; 1h/wk)		-22 *	- 25 *	-19	n.s.
Job stress (- = less; + = more)(5)					
Job satisfaction (pleasure, interest and commitment)		- 5	- 5	- 6	n.s.
Satisfied with the available time for practice management		6 **	+ 8 *	+ 3	n.s.
Costs vs benefits		8 ***	+10 **	+ 5	n.s.
Experienced workload		- 2	- 4 (*)	+ 0.02	n.s.
Experiencing inappropriate demands by patients		- 5 (*)	- 6 (*)	- 5	n.s.

Significance of the difference within groups: (*) $p \leq .1$, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 3 Indicators scoring more than 10% higher in the revisit after one year (Percentages, GP-level, N=81, Practice level = p, N=62)

Indicators		Visit	Revisit	Difference
Audit on outcome of prescriptions	p	24%	50%	26%
Presence of a survey list of diabetic patients	p	48%	71%	23%
Applying pressure gradient bandage for venous ulcer		49%	68%	19%
Medical records computerized	p	16%	32%	16%
Sticks for measuring blood glucose in the doctor's bag		68%	84%	16%
Less than one third of patient leaflets is commercial	p	48%	64%	16%
Acquaintance with arrangements for temporary care for patients requiring community support	p	77%	92%	15%
Presence of caustics for treatment of recurrent epistaxis	p	53%	66%	13%
Agreement on medication policy with the home for the elderly	p	39%	52%	13%
The assistant glues small cutwounds	p	24%	37%	13%
Audit on data provided by the health insurance funds	p	16%	29%	13%
Presence of a separate (treatment) room for assistant	p	64%	77%	13%
Medication is computerized	p	45%	56%	11%
Presence of a tonometer	p	43%	54%	11%
Presence of a disposable local anesthetic for the eye	p	80%	91%	11%
Presence of a β_2-sympathicomimetic spray in the doctor's bag		85%	96%	11%
Demo or picture of the abdomen for patient instruction		73%	84%	11%
Presence of an arrangement for GP-replacement (illness, etc.)	p	74%	84%	10%
Computerization of the problem list of patients	p	19%	29%	10%
The agenda for the GP-group meetings is sent in advance	p	58%	68%	10%
The assistant removes cerumen with a syringe	p	58%	68%	10%
The assistant does the bloodpressure check-ups	p	32%	42%	10%

DISCUSSION

This is probably the first study on the feasibility and effectiveness of practice visits in general practice and it suggests that assessment in a practice visit has the potential to become a powerful tool in quality improvement. After a year we measured actual change with the practice visit method (VIP) of nearly all aspects, the change being significantly more marked after mutual practice visits by peers. Change was more outspoken for aspects, that are more readily altered in a year's time, like equipment, delegation, organization of information and record keeping. Collaboration with colleagues and other care providers changed less, for it may take more than a year to change and require more investment. Some of the indicators changing more than 10% are minor but relevant items in the doctor's bag, others imply clear organizational improvements like having a list of diabetic patients, agreement on medication policy with the home for the elderly or sending an agenda for the GP group meetings in advance. Surprisingly, after a year GPs had improved on workload and job stress, which were also the hottest topics in the discussion of the feedback (as reported by the non-physician observers). The ever increasing workload of

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visit instructive, did it result in plans for change, etc (4 questions, α = 69) and finally for each of the six chapters of the feedback report questions on *the GP's recognition of his/her practice management in the feedback* (6 questions, α = 53) All questions had to be answered using a five-point Likert scale

For the measurement of change we used all 208 indicators included in the practice visit method They were proportionally distributed over six different chapters of practice management, 187 of these 208 indicators fitted into 33 internally consistent dimensions of practice management (table 2) [20 21 22 23 24 25 26]

Change in practice management was defined as the differences in score on the 208 indicators and on the 33 dimensions or scales of aspects of practice management, measured during the first visit and during the visit after a year The differences were analysed for all visits as well as for each program - peer visit and visit by a non-physician observer - using a T-test if the distribution was normal and a Sign test if skew Some indicators and dimensions required analysis at practice level, others at GP-level (table 2) To analyse the differences in feasibility between both programs we used a Wilcoxon test

RESULTS

Of the 15 GP-groups one group of 9 GPs was excluded because the group disagreed with being assigned randomly Divided over all groups another 10 GPs withdrew for personal reasons (rebuilding, too busy, close to retirement) The remaining 14 groups consisted of 90 GPs in 68 practices 7 groups with 46 GPs were assigned to 'mutual visits by peers' and 7 groups with 44 GPs to 'visits by non-physician observers' Both groups were comparable for the number of GPs being a member of the Dutch College of GPs, for working full-time, for having a practice in an urban area and for being a GP-trainer However significantly more single-handed practices (27 vs 15) were visited by non-physician observers

Paired data on practice management were available for 81 visits, 9 visits (5 peer visits and 4 visits by non-physician observers) were not repeated for various reasons (GP changed practice, was ill, died, retired, had no time, was not interested anymore)

Fewer questionnaires on feasibility were returned by GPs after mutual visits by peers than after visits by non-physician observers (70% vs 95%) A visit by a non-physician observer was appreciated significantly better, but both programs did not differ much in 'acceptance' by the GP and in 'reported change' (table1) A full 100% of the GPs visited by a non-physician observer rated the visit as 'not unpleasant' against only 62% of the mutu-

PRACTICE VISITS AS A TOOL IN QUALITY IMPROVEMENT? A COMPARISON OF VISITS AND FEEDBACK BY PEERS AND NON-PHYSICIAN OBSERVERS

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Submitted

and workload and job stress Patients reported a significant improvement of the use of patient information on diseases by their GP after one year GPs and practices in either program - peer visit and visit by a non-physician observer - changed equally much for the aspects: use of equipment, diagnostics and therapeutics, medical technical tasks delegated to the practice assistant, and assessment on outcome and making a year report. However, change was clearly more noticeable after mutual visits for a number of aspects, especially the 'content of the doctor's bag' and 'record keeping' Differences of 10% or more in score per indicator are listed in table 3 which is exemplary of actual change All but four are at practice level

INTRODUCTION

In a practice visit assessment one or more observers come to a practice to assess the quality of care or services preferably against guidelines and criteria This may be a creative and stimulating way of assessing how well GPs and practices measure up to their intended performance, pointing the way to how the practice can develop [1] Practice visits, however deserve careful evaluation, because they require manpower, money and time In a number of countries a practice visit is used in quality improvement as a tool to identify weak and strong points in the quality of care and to set priorities for change Yet evaluation of practice visit methods is scarce It is unclear which method of auditing the practice and providing feedback in particular is both feasible and effective and will induce changes that remain over time The methods to assess general practices in a practice visit currently used in the UK [2,3], Canada [4], Australia [5] and New Zealand [6] etc differ in program (e g in the qualifications and number of observers/assessors, in the length of the visit or in the method of data collection), in content [3,7] and in objectives (educational vs selective e g becoming a 'Fellow of the RCGP in the UK or identifying 'GPs in need of extra training' [7] in Canada and in Australia [8]) Particularly the best person(s) to do the practice visit is an open question This hampers the implementation of practice visit programs

In the Netherlands during the 1970's purely educational practice visits by peers were received with considerable enthusiasm [9,10] and participation was strictly voluntary, but the enthusiasm did not last and the method remained unevaluated In the UK practice visits were not accepted as a routine program for quality improvement in general practice despite many efforts [2,3], the reasons remain unclear

Studies in the UK showed that information feedback in general practice supported by visiting colleagues (clinical facilitators) was more effective, but less accepted and more costly than statistical feedback in producing behavioural changes at GP-level [11,12] (not at practice level [13]) In his study on peer review in local GP-groups Grol [14] found after one year changes in history taking patient education involving patients in the consultation, follow-up and prescribing drugs However the practice visits in his study were not evaluated Peer review in local GP-groups was evaluated up to 3 times more effective than other methods of quality improvement [15] Colleagues, Grol concluded could be more knowledgeable, committed supportive, constructive and understanding, all qualities needed for awareness and change [16] Yet a colleague often is opinionated and thinking in solutions, stereotypes and truisms [17] On the other hand, feedback by non-physician observers

Our results are in agreement with the data of the study on burn-out [5], especially the outcome that the type of practice (single-handed, dual-, group practice, health centre), practice size and degree of urbanisation (except the three large cities) hardly influence the job stress of the GP. Our study results seem to support the model of Groenewegen & Hutten [12].

The extent to which GPs (but also other professionals in health care [25]) can structure their own functioning, has an important role in creating a feeling of burn-out or not [5]. This might be an explanation for the lower job stress we measured in dual-, association- or partnership practices as compared to salary-paid GPs (in health centres).

Further study on workload and job stress should be focused on exact assessment of the use of time in relation to direct patient-contact ratio, home-visits ratio and telephone-call ratio on the one hand and its association with the style of working, of holding consultations, of managing and other personality characteristics that are relevant to job stress of the GP on the other.

the GP (55hours/week) in the Netherlands [24] has already made improvement of workload and job stress top priority for the professional organizations

The method was well accepted and appreciated by all, although less by GPs who mutually visited each others practice The low response in filling out a questionnaire after peer visits probably concerned GPs who were tired of the visit These GPs probably would have appreciated the VIP even less than the ones who did respond in the peer visit group This would have made the difference in appreciation compared to the group visited by non-physician observers even more downright Peers actually disliked the data collection and tallying, yet visiting a colleague in another practice probably helped to improve their own practice management, since peer inspection of the doctor's bag and peer observation of medical records were associated with highly significant corresponding changes of the visiting GPs and their practices Therefore the program of visiting and observing a peer practice oneself is likely to be responsible for the more marked change over visits by non-physician observers Some change, however may partly be attributed to the observer being a peer For example the remarkable change on the aspect of 'collaboration with partners in secondary care/hospital seen after visits by a peer could thus be explained

The good test features, the low cost and the easy program may explain why 90% of the GPs reported to want a follow-up within 2-5 years The cost of mutual visits by peers was estimated to be around £ 20,- for materials plus 6 hours of GP-time (including the 4 hours for the mutual visit) and some overhead costs A visit by a non-physician observer (training a day s visit, organization and travel) amounted to £ 200,- or £ 300,- plus 2 hours of GP-time Both programs may be equally expensive (an estimated £ 400,- per visit)

The conclusions have to be interpreted with some reservations A control group without intervention was not included, because it would still require data collection in a practice visit which would probably influence actual performance The drop out of 9 mostly older GPs was very low and was mainly caused by reasons not related to the study

In earlier studies feedback to the GP of objective data on clinical competence and performance proved more effective than CME [C] A combination of information transfer and learning through social influence or through a management-supported strategy - feedback and peer review in the VIP - is effective in most situations [27 28] However the only randomized

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controlled trial on this combination showed a weak effect [29]. The lesser effectivity of single interventions compared to multifaceted interventions [27] is consistent with the finding that mutual practice visits by peers resulted in more change. Compared to a mutual visit, a visit solely with feedback from a non-physician observer can be considered a single or 'less multifaceted' intervention reportedly resulting in less change.

The practice visit method with the VIP focuses on actual information and feedback. It keeps judgements of the observer to a minimum by using a prestructured feedback report yielding reliable feedback independent of the observer [20]. In our opinion this approach was one of the keys that made the visit well accepted and appreciated.

Undisputed guidelines and standards in practice management would probably further increase the effectivity of the assessment and this hypothesis got more leverage in a study on the effectivity of audit visits in Dutch surgical departments, where assessment against guidelines proved very effective, but the study missed a control and the follow-up after a year consisted of a questionnaire only [30].

The study design did not allow to ascribe differences in score to either the program or the background of the observer and 'who should do the visit' is still unresolved. "Fellowship by assessment" [2] lists some more unresolved questions and choices like whether the practice or the GP should be judged, whether one should give comment or recommendations and whether attainment (what has been accomplished) or development (the process of quality improvement) should be judged [3]. Research focusing on these problems instead of the content of the visit is important for wider acceptance of this powerful tool in quality management.

Our study supports the view that data collection in a practice visit should preferably be carried out by non-physician, trained observers [31], the latter also being more appreciated - though less effective - than untrained peers in the discussion of the feedback. The better effectivity of mutual visits by peers could be worth the mild discomfort and it could also be more cost-effective. To combine optimum change and optimum appreciation we propose a program in which the GP inspects the equipment as well as the doctor's bag and does the observation of the medical records, but in which he is assisted in data management and in giving feedback by a non-physician observer. The role of the non-physician observer (non-GP) both in doing practice visits and in helping to promote quality improvement deserves more attention.

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CHAPTER 9

GENERAL DISCUSSION AND CONCLUSIONS

SUMMARY OF THE MAIN RESULTS

General practitioners may benefit from an educational method to assess their management and organization of the practice. In this thesis we reported on the development of such an assessment method, the variation in practice management and the effects of the method. The main results of the study are:

- The domain of practice management has been defined based on an analysis of the literature and a consensus procedure. It proved to be possible to establish a systematic framework for describing practice management in general practice, approved by the Dutch College of General Practitioners (Checklist of Practice Management [1]).
- On the basis of this framework a method to assess practice management using a practice visit has been developed (the VIP: Visit Instrument to assess Practice management). The instrument comprises written questionnaires for the GP, the practice assistant and patients, a tally list for the observer, a procedure for data collection, a structured feedback report for the GP and a procedure on how to conduct the practice visit, including instructions on how to discuss the feedback report with the visited GP and - after all visits - in the GP-group. The method yielded valid and reliable feedback, was well accepted by its participants and proved to be quite feasible. (chapters 2-3)
- Analysis of the results of visits in a large number of practices largely confirmed the theoretical framework and resulted in an empirical framework, a taxonomy of dimensions of practice management. (chapter 3)
- The variation in practice management between GPs and practices could be studied with the VIP (chapters 4-7). GP-trainers, full-time working GPs and practices with at least a full-time assistant per GP scored higher on average; dispensing practices scored lower on nearly all dimensions of practice management. Personal list size and having participated in the vocational training hardly explained any variation. Single-handed practices, rural practices and dispensing practices delegated fewer tasks to the practice assistant and collaborated less with other care providers; practices with a separate treatment room for the assistant delegated more tasks. GPs with a practice at home were more satisfied with the available time for practice management and also experienced less workload than GPs who did not work at home. Single-handed practices, practices with fewer patients in their locum tenens group and practices with at least a full-time assistant per GP scored higher on accessibility; single-handed practices, rural practices and practices with more than 40% private patients scored higher on availability.

- Using the VIP and providing feedback to GPs and practices resulted in change. Some clues were found on what may be an optimal program for a practice visit. Mutual visits by peers resulted in more change but a visit by a non-physician observer proved to be more acceptable and appreciable. (chapter 8)

We will subsequently discuss these results.

1. THE DOMAIN OF PRACTICE MANAGEMENT

An assessment method gains validity first of all when its content is reflecting the reality of daily practice management [2,3]. A condition for good content validity of an assessment method is the availability of a systematic and complete description of the domain that will be assessed. This description of the domain of practice management was the result of a study of the literature and a consensus procedure with a panel of 40 GPs and experts in practice management. The resulting framework of 2410 items was generally accepted by the profession as complete and relevant for practice management as well as approved and published by the Dutch College of General Practitioners.

Some aspects in the framework, such as 'Equipment', 'Tasks delegated to the practice assistant' and 'Patient record keeping', were relatively easy to develop and required only minor adjustments in the consensus procedure. Developing other aspects such as 'Collaboration with other care providers', 'Organization of services' or 'Organization of Quality Improvement' proved to be more difficult, since the literature on these aspects is less explicit.

Originally the domain did not include workload and job stress. These aspects were not mentioned by the panel members as important elements of practice management. This is understandable, since time management has only become an integral aspect of practice management in the literature in recent years and it is usually addressed separately [4]. However, during the pilot study the GP-trainers mentioned the importance of lack of time and high job stress for their practice management. Together, workload and job stress were thereupon acknowledged as an important and separate chapter of the domain of practice management and an inventory of relevant indicators was made.

Why was assessment restricted to practice management?

The practice visit method for the assessment of practice management developed in our study is primarily aimed at identifying and prioritizing structural aspects of general prac-

tice care in need of improvement The reason for a restriction to practice management was, that a more comprehensive method covering all aspects of general practice care was expected to be too extensive and complex Such a total assessment was expected to be a bridge too far for a first acquaintance of the GP with practice visits Providing feedback on all aspects of care may submerge the GP in a vast amount of suggestions for improvements and may not be very cost-effective Another argument was that practice visits are particularly appropriate to assess structural aspects rather than other aspects of care (such as medical performance or communication with patients) Other methods such as chart audit or videotape may be more suited for these aspects [5 6] Yet such a restriction to practice management is new Nearly all existing practice visit methods (in the UK, Canada or Australia) attempt to cover the whole field of general practice care

Restriction to practice management may have the disadvantage that the GP will focus on management too much at the expense of other aspects of general practice care that may be more in need of improvement The advantage of limitation is, that the GP does not lose track in the various areas, which possibly require improvement

It may be recommended to use the assessment of practice management in a practice visit as a first step followed by more comprehensive assessment, such as knowledge or skills assessment, evaluation of the doctor-patient communication and reviewing medical performance

2. THE DEVELOPMENT OF THE VISIT METHOD TO ASSESS PRACTICE MANAGEMENT

In order to guarantee validity, reliability feasibility and acceptance of the practice visit method a rigorous process of development was undertaken The various activities in this process will be discussed in the following paragraphs

The selection of possibly discriminating items from the domain

The selection of possibly discriminating items from the framework for the pilot study was performed by the research team It was not always easy to select a sufficient number of relevant indicators that could be expected to discriminate between GPs or practices and at the same time to warrant proportional distribution of indicators over the various chapters Moreover, for quite a few aspects it was difficult to define and formulate them as indicators for assessment Some of them do not occur on a daily basis (e g taping a sprained ankle) or are hard to verify (e g logistics around urine culture, repeat prescriptions or

testing haemoglobin). Fortunately aspects of 'tasks delegated to the practice assistant' and 'patient record keeping' had already been used as indicators in other studies; on the other hand 'collaboration' or 'workload' had to be developed almost anew.

The frequency analysis and selection of indicators

In the development of the method emphasis was put on finding discriminating indicators. Consequently essential aspects in a practice such as the omnipresent stethoscope or otoscope were not taken into account. Checking for essentials may be more relevant than checking for indicators not considered a 'must' by all GPs. One may hold indicators (present < 95%) for the fringe aspects rather than the "core business" of general practice care. Essentials, however, are met by almost all GPs or practices and thus do not show much variation. They are hardly of educational value and leave little room for improvement and the question is whether you can bother more than 95 GPs out of 100 to find one missing aspect in the remaining GPs.

Yet our cut-off points (95% and 5%) were based on common sense and may be discussed. Using a cut-off point of 90% would have resulted in the loss of a considerable number of important indicators and dimensions, threatening the validity of the VIP. On the other hand, aspects scoring less than 5% in a practice visit are questionable indicators. The GP should not have the feeling to be pushed by the hobbies of a few GPs. Yet for our educational assessment method one may discuss if it would be wise to leave out e.g the tympanometer - useful for the diagnosis and follow-up of patients with glue ears - because it scored 4%. In order to be consistent, though, we had to choose cut-off points. Finally, it is interesting that discussing the discriminating indicators may have been precisely what gave GPs the feeling that they were discussing (their) practice management.

Checking for essentials is important to identify substandard practices and it is left to the authorities (The Health Inspection in the Netherlands). They developed an instrument to check for essentials to be used in sample practices or practices that gave rise to suspicion of substandard care [7].

The first test of the indicators was undertaken in the pilot study with 59 GPs. We may have removed potentially useful and valuable indicators, which would have discriminated between GPs or practices, when formulated differently. This may have been true for some indicators in the patient questionnaire that were removed. E.g. relevant and useful indicators like "the GP grants a request for a home visit the same day" (score 97%) or "the

consultation time is sufficient" (score 96%) were dropped, though a different wording might have made these indicators more discriminating. We had to stop trying out new formulations before the start of the main study in 110 GPs and accept that not all relevant items of practice management could result in discriminating indicators. Yet in the discussions in the GP-groups after the visits nobody reported to have missed important aspects and few useful and new indicators were suggested.

Too much emphasis may have been put on selecting visible and quantifiable aspects as indicators of practice management at the cost of less concrete aspects, such as "the GP's resistance to change", "communication between staff and GP" or "the way in which tasks are delegated". These less concrete indicators would depend too much on the subjective judgement of an observer. By including primarily measurable and observable indicators we hoped to avoid fruitless discussions on and resistance to the results of the practice visit. Doubt about some of the indicators may affect the overall validity and thus acceptance of the feedback of the assessment.

Establishing the framework

Through factor analysis and analysis of the internal consistency within the groups of indicators the dimensions of practice management, formulated in the original framework were confirmed to a large extent. However, some limitations of the proposed taxonomy (chapter 3, tables 1 and 2) need to be discussed.

The internal consistency of some of the dimensions of practice management, expressed through Cronbach's alpha, was limited. High internal consistency of the dimensions would have required many quite synonymous or similar indicators. This would have resulted in long questionnaires limiting the feasibility of the assessment method. The actual aim of the assessment method is, however, to include as many relevant and mutually excluding indicators as possible. Ideally each indicator relates to a specific, exclusive aspect of practice management. This demand is more or less conflicting with the desire to order the indicators in homogeneous dimensions [8]. Nevertheless, we succeeded in ordering 84% of the indicators within meaningful dimensions with an acceptable internal consistency.

Scores on these dimensions proved to discriminate between different groups of practices and GPs with certain characteristics, contributing to construct validity (see below).

After the second visit the participants were asked whether they recognized their own

practice management in the practice visit feedback at the level of the dimension Hardly any GP reported to have missed important aspects in the feedback and nearly all dimensions were appreciated as good proxies, giving a true picture of their practice management (appendix 2) However, when asked whether the participant experienced the order and systematics of the feedback as complex and not transparent, 80% of the GPs (strongly) disagreed When asked whether some aspects of practice management got disproportionate attention 61% of the GPs (strongly) disagreed Over 91% of the GPs (strongly) agreed on "the total feedback gives an accurate picture of my practice management" (appendix 3)

Although the framework and the indicators were accepted well and could be underpinned by empirical data, they will need permanent maintenance, i e finding new indicators and removing irrelevant, obsolete or non-discriminative indicators E g a spirometer or 'monofilaments to test loss of sensitivity in patients with diabetes mellitus' are items that have become relevant for the GP just recently, the now omnipresent Peak flow meter may be dropped The assessment method should be open to such new developments Moreover, regular data collection and analysis of representative samples of GPs and practices are required to adapt the framework and its structure

3. THE INSTRUMENTS USED IN THE PRACTICE VISIT METHOD

The instruments used for data collection concern a questionnaire for patients, a self-report by the GP and the practice assistant and an observation by a peer/GP or by a non-physician observer

The patient questionnaire

The patient questionnaire treats the patient on a par with the other experts in the data collection, i e the GP, the practice assistant and the observer Particularly for assessing aspects related to "Service" in general practice care the patient may be seen as an expert and his or her evaluations may be a help in improving practice management This approach also gives the patient a clear role in assessing and improving care [9 10 11] The selection of patients - consecutive patients coming to see their GP - does not guarantee a representative sample of all patients on the GP's list However since they have experience with the practice, they are probably able to provide valuable information on service aspects [12] To achieve accurate and reliable information a considerable number of patients should be questioned, probably more than 60 per practice [13] To safeguard feasibility at

first 15 questionnaires per GP were included. Since GPs questioned the value of the results based on only 15 patients, the number was increased to 30 patient questionnaires, still a small sample, but sufficient for the detection of important flaws in service. The participants approved of this number of 30 (appendix 4).

Questionnaires for the GP and practice assistant

Many of the data on practice management were gathered through questionnaires, in which GPs and practice assistants report on the actual situation in the practice. For instance, data on the use of equipment, collaboration with care providers, organization of prevention, level of computerization, use of patient records and workload are collected by means of self-report. The respondents may over- or underestimate their own performance. This was not investigated, because we expected the bias to be limited, since most of the questions concerned very specific aspects of management and could easily be verified by the observer. Furthermore, the educational objective of the visit made "polishing up the answers" inadequate and less attractive. Only time management might be a subject where exaggeration could be expected, since most people complain about being busy all the time and reported time is also notoriously difficult to verify. However, the answers were remarkably in line with previous research on workload using anonymous questionnaires [14, 15] and with the calculation from the appointment book as used in the practice visit method.

The observation by a peer or by a non-physician observer

Knowing that you will be visited and assessed may influence your performance. Some observers reported that GPs did replenish their doctor's bag or clean the practice in advance. The visit certainly brought about some hightening of tension and an increased awareness of possible weaknesses in practice management. This may have led to improvements in anticipation of the practice visit. Fear of embarrassment may have led to the selection of well-maintained patient records and to polishing up specific aspects of practice management.

To increase reliability, information of the observers and participants was used to adjust questions that were unclear and required adstruction. Subsequently, inter-rater reliability between different types of observers, including the researcher, acting as 'gold standard', was studied.

Inter-rater reliability between peer-observers - assessing the same practice on premises,

equipment and practice organization - was fair (Cohen s kappa > 60), between observer (GP or non-physician observer) and researcher - acting as a gold standard - good (Cohen's kappa > 80) and between peer-observer and non-physician observer also fair (Cohen s kappa = 51) Inter-rater reliability concerning the observation of patient records proved to be good between peer-observer and researcher (Cohen's kappa = 74), fair between non-physician observer and researcher (Cohen s kappa = 61) and only moderate between the non-physician observers (Cohen's kappa = 42)

So, on the whole, the reliability of data collection by observers may be seen as acceptable This was achieved with 2 x 4 hours of instruction of the non-physician observers or half an hour's introduction in the group of GPs performing the peer visits This instruction was in addition to the written instruction provided in the VIP It was considered an absolute minimum, a longer introduction was expected to put off peer-observers and harm the perception of a simple and easy method Yet some more extensive instruction to prepare GPs on mutual practice visits in the setting of a group, explaining the procedure and scoring system, will probably increase the reliability of the data without making the procedure more burdensome Likewise, more extensive training of the non-physician observers in observing patient records and in managing complete and correct data collection is probably required to achieve higher reliability

4. FEASIBILITY AND ACCEPTANCE OF THE PRACTICE VISIT

Feasibility

For a successful implementation and use of practice visits, feasibility is as important as validity and reliability So, much effort was also made to design appropriate procedures and evaluate their feasibility and acceptance These procedures were improved after the pilot study and again after the first round of visits We asked the participants for their opinion on the feasibility of the method after the second round of visits

All participating GPs completed the practice visit and hardly anybody considered it a burden for the practice All questionnaires were returned, a few GPs did not complete the questions on workload and job stress Even though the patient questionnaire was reported to be a little threatening, it was handed out in all practices, although not all GPs had a full response of 30 questionnaires

The peer-observers regularly reported that they experienced the observation of the patient records as boring and tedious On the other hand, the observation of the doctor's bag

as well as observing the premises and equipment was seen as a necessary and valuable task and was done without resistance. It proved to be possible to complete the entire assessment procedure including the feedback report within 4-5 hours, although travelling time and time loss due to other factors usually resulted in a day's work for the non-physician observer. The burden for the practice, the GPs and practice assistants proved to be limited. On the day of the visit, the visited GP usually needed only 1-2 hours to assist the observer and to discuss the feedback report. So, the visit did not disturb the daily routine too much, which was confirmed by the participants. Spreading the completion of questionnaires, the visit and discussion of the results in the GP-group over time helped to increase feasibility.

At the start of the project the practice visit method was primarily aimed at providing feedback to the GP, rather than to the practice. This approach required long questionnaires with questions on the practice answered by each GP working in that practice. This proved to be impractical as well as a waste of resources. Moreover, it became apparent that the level of feedback was important, not only for a correct level of statistical analysis of the reference data, but also for a correct level of making improvements, i.e. the level of the practice or the level of the GP. Focusing on the GP has the advantage of providing feedback to a person instead of an institution, yet specific aspects concerning the practice (e.g. making a leaflet with information on the practice) are the responsibility of all GPs as well as the joint practice team.

To study the agreement between GPs working in the same practice, data on practice management provided by 7 pairs of GPs were compared. The agreement was acceptable, but not optimal (kappa = 0.61). This was a little unexpected, for we assumed absolute agreement between GPs in the same practice on aspects concerning the practice. This problem has not been explored further, but may need attention in the future.

We also studied the agreement between GPs and their practice assistants on questions about "tasks delegated to the practice assistant". The correspondence between GPs and assistants of the same practice was generally high for most tasks (kappas ~ 0.8). We concluded that one answer of a GP or practice assistant, representing the whole practice, may well be reliable and more practical for matters concerning the practice. In order to improve the assessment method, data collection and feedback on either GP-level or practice

level should be clearly separated. The practice assistant can answer questions on delegated tasks at the practice level in a reliable way.

Acceptance

The participants in the study were requested to give their opinion on the practice visit method after the second round of visits after a year (appendices 3 and 4). In general the GPs were positive about the visit and did not consider it a threat for themselves or the practice assistants. The feedback was judged relevant, surveyable and to the point. The reference data, the histograms and the text justifying the indicators were well appreciated as well as the immediate feedback after the visit. One approved of the number of patient questionnaires (30) and patient records (20) included in the method and of the time required for the different parts of the practice visit. The visit was considered worthwhile by the majority of the participants, although a quarter of the GPs did not agree on the efforts outweighing the benefits. Finally, practice visits with the VIP were welcomed by 90% of the participants as part of a 2-5 yearly routine (appendix 4). Yet half of the participants reported that they were not stimulated to select further training by taking part in the practice visit.

5. WHY A PRACTICE VISIT WITH EDUCATIONAL OBJECTIVES?

Assessment can have educational objectives (learning and improving) as well as selective objectives (decisions on licensing or status in the profession). In his evaluation of practice visits in Australia Salisbury concluded that it is confusing for the participants when both objectives are mixed within one practice visit method [16, 17]. The VIP is clearly focused on educating GPs and improving practice management and this was explicitly discussed with the participants in our study. Feedback was provided in the form of reference data of colleagues and not related to any quality criteria. Nevertheless, some GPs hinted that they were afraid to cooperate in 'hauling in the Trojan horse', which confirmed the resistance in the profession to more selective assessment methods.

GP-organizations in the UK [18,19], Canada [20] and Australia [21] have all chosen for practice visits with predominantly educational but also partly selective objectives. Practice visits (peer inspection) in Australia are used to assess practices against entry standards of the Royal Australian College of General Practitioners (RACGP) in order to identify substandard practices. Their validity and reliability have been studied; the practice visits are re-

ported to be well accepted but others report controversy in the profession concerning the approach [16 22] The minimum entry standards left little room for improvement of practices achieving above average, raising doubt on their benefit for the GP and the practice

In Canada practice visits - performed by peers and taking half a day - are also used to identify GPs performing substandard A next step is that the licensing bodies refer these GPs to the "Assessment and Enhancement Program" (CAEP) Subsequently rigorous assessment of physicians' clinical competence serves to identify deficiencies, leading to an "educational prescription" [23 24] The program is complementary to existing (educational) peer review and patient complaint mechanisms This approach was partly chosen, because in Canada many GPs are over 70 years old or working single-handedly in quite remote areas for long periods of time The College of Family Physicians of Canada does not participate in the program and has its own "Practice Assessment Program" - taking two days - focusing on the above average rather than the below average performers [25]

In the UK a practice visit method is used to become a fellow of the Royal College of General Practitioners (RCGP, What sort of Doctor) Though elegant in its approach, it was not implemented on a large scale, met a lot of criticism in the profession and proved to be logistically difficult Its objective "to become a fellow of the RCGP' enabled the GP to become a GP of proven excellency, but this interfered with the climate of peer collaboration necessary for quality improvement [18 19]

Contrary to this approach the Tasmanian Interpractice Visits Project (TIVP) focused on educational practice visits through peer review, comparable to the VIP, and also included an observation of 90 minutes of consultation The program is well accepted and is in its tenth year (Gill, personal communication)

It is recommended that participation in practice assessment programs, rather than the results of such programs serves as a criterion for accreditation, recertification or becoming a GP-trainer [16] This approach is in line with Berwick's recommendation [26] to polish all the apples (to shift the Bell curve to the right) rather than weed out the "bad apples" Identifying bad apples should be left to the health authorities (Inspection of Health Care) The assessment method should first of all provide sufficient possibilities for improvement

6. VARIATION IN MANAGEMENT BETWEEN GPS AND PRACTICES

Reducing unwanted and unnecessary variation in general practice is one of the goals of

quality improvement. The results of the practice visits showed variation in management between GPs and practices. It is not possible to judge the quality of management of the Dutch General Practitioner on the basis of our study, which was not designed for that purpose. For our purpose it was important to have a sufficient number of each of the various sorts of practices and GPs to be able to show and explain existing variation in practice management. The study group of 110 GPs in 88 practices met this requirement. As far as the representativeness of our study group is concerned, the slight overrepresentation of health centres and rural practices was probably not an important source of bias for the validity and feasibility of the VIP, nor was the underrepresentation of substandard practices.

The explained variance in different aspects of practice management by characteristics of GPs and practices was not substantial, mainly less than 20%. Yet, it helped to indicate which type of GPs or practices may benefit most from improvement of, for example, 'tasks delegated to the practice assistant' (dispensing, single-handed or rural practices) or 'service' (practices with more partners). The remaining variation may well be explained by mainly personal factors. In a comparable study by Baker one such factor was the 'willingness to change or innovate' [27], which was more present in training practices and practices with a practice manager [28]. In our study practices with such features also scored higher on most aspects of practice management. However, more research is needed to clarify the remaining variation. Some additional findings concerning the variation on aspects of practice management will be discussed below.

There was considerable variation in the number of tasks delegated to the practice assistant as well as in the percentage of assistance per GP, but both aspects were weakly associated. One would expect few 'tasks delegated to the practice assistant' to be related to little assistance per GP. This may indicate considerable variation in effectiveness between practice assistants. Differences in the way they handle tasks have hardly been investigated [29], but could result in important information to enhance productivity.

'Service' had a lack of variation, which was quite in line with comparable studies on patient satisfaction with the service. In most practices about 85-90% of the patients were satisfied very much about service aspects. So, providing feedback to practices would benefit from more variation, which in turn may require more discriminative questions. In the VIP the yes/no answer category was used in the patient questionnaires and this may have reduced variation. This option was selected because of its practicality for the observer in

calculating averages and because we focused on facts rather than opinions. In an improved VIP a Likert scale for questions on opinions of patients may increase variation and be just as practical, if entered in a computer directly.

Both 'the availability of patient information material' and 'tasks delegated to the practice assistant' score less in single-handed practices, in dispensing practices or in practices with less than a full-time assistant per GP. Yet, De Haan found that, irrespective of type of practice, all GPs indicate the same clear intentions both to delegate and to give out information [29, 30]. Whether GPs act accordingly, therefore seems to depend to some extent on the organization of the practice.

The discrepancy between high scores on dimensions of accessibility of the practice and availability of services on the one hand and high scores on most other dimensions on the other, is remarkable. This discrepancy has been observed in other studies as well [16, 31]. Why would the patient's appreciation of the quality of service not be congruent with high scores on other aspects of practice management? All aspects reflect working according to guidelines and values of the GP profession, so why would all aspects (except service-aspects) of practice management be inversely related with the patient's rating of service? This asks for an explanation and makes you realize, that quality improvement initiated by the profession does not automatically result in higher appreciation of services by the patients.

Workload and job stress showed considerable variation and explaining this variation is difficult [32, 33]. The weak associations with GP and practice characteristics confirm this complexity, making recommendations on the basis of our study difficult, even a recommendation on the optimal personal list size.

Various aspects of practice management variation have been analysed and discussed in detail in chapters 4, 5, 6, and 7 of this thesis. The chapters 'Collaboration', 'Record keeping' and 'Organization of quality improvement' in the VIP have also been analysed, but the results have not been published and will be discussed briefly below.

Linear regression, using GP- and practice characteristics as independent variables to explain the variation in 'collaboration with colleagues', 'collaboration with direct staff', 'collaboration with colleagues in secondary care/hospital' and 'collaboration with other care providers', revealed some fairly obvious associations. Dispensing practices scored lower on 'collaboration with colleagues', single-handed practices scored significantly lower on 'collaboration with direct staff' and rural practices scored lower on 'collaboration with

colleagues in secondary care/hospital' The results mainly helped to confirm construct validity of these aspects

Variation in record keeping has recently been reported by De Melker et al [34] They found two functional clusters (Recording basic data' and 'recording entries using the SOAP-notation') Our results disclosed the same clusters, as well as three others (recording of prescriptions, extent of use of the records and level of computerization of medical records) De Melker et al did not find significant relations with characteristics of GPs and practices In our study we also found a few relations between record keeping on the one hand and characteristics of the GP on the other Dispensing practices, for instance, scored lower and training practices scored higher on all aspects of record keeping, GPs with a practice at home scored less on actual use of records So, the type of practice seems to influence the quality of record keeping to a certain extent Our results were also in line with a previous study by Meyboom conducted 10 years ago [35]

Finding adequate indicators for the organization of quality improvement proved to be quite difficult, probably because this aspect of management is still in its infancy Dispensing practices scored lower on this aspect All in all, few practices showed to have an explicit policy on quality improvement Relevant indicators for organizing quality improvement in the practice need to be selected and may become available in the future

7. CHANGE DUE TO PRACTICE VISITS

Many participants reported to have changed their management after taking part in the practice visit About a quarter of the GPs said that they changed their equipment, their doctor's bag, the number of tasks delegated to the practice assistant, the service and organization of care, the record keeping or that they took measures to reduce workload and relieve job stress In our follow-up practice visit after a year we also found changes in actual performance, the areas of change largely corresponded with the changes reported by the participants (appendix 2) Furthermore, mutual visits by peers showed more change than practice visits by non-physician observers How to interpret these results?

Actually various strategies to induce change are included in the practice visit method the participants receive concrete feedback on their performance, they are educated on optimal practice management and they are visited in their practice by a peer or a person with expertise in the field of practice management (peer review, outreach visits) The GPs who visited each other, observing the practice of a colleague, may also have used this as a

model as an example for possible improvements in their own practice So a multifaceted strategy a combination of interventions is used in the practice visits focusing on the broad range of factors that may affect change in practice management

In a literature review on single and combined strategies for implementing change in primary care, Wensing and Grol concluded that particularly a combination of various strategies is effective [36 37] In a literature review of 99 trials, containing 160 interventions to change the physician's performance, Davis concludes that systematic practice-based interventions and outreach visits are more effective methods compared to widely used CME methods such as conferences but that they are seldom used by CME providers [38] It is not easy to analyse the relative contribution of the different strategies in multifaceted interventions to the change found Yet it is useful to evaluate each strategy in the practice visit method i e peer review, outreach visits modeling feedback and education separately In the practice visit method these strategies are intertwined and a different mix is used in each of the two programs peer visits and visits by a non-physician observer From a logistic point of view it is an important issue, for instance, whether peer review - feedback, education and modeling by peers in a visit - is more or less desirable and/or effective than outreach visits, feedback and education by trained non-physician experts (observers)

Feedback We provided the GP or practice with feedback by plotting the individual scores against reference scores, visualized in histograms (see appendix 1) For instance the score on the information provided on practice regulations (an indicator for 'Accessibility) could be compared to the score of 110 GPs representative of the Dutch GP, but also the total score of a GP on ' accessibility" could be compared to the average score of 110 GPs on that dimension Moreover, comparing the GP s score on accessibility to other aspects relevant for accessibility, such as workload or assistance in the practice, provided additional information on practice management All feedback could be studied by the GP it was discussed in a one-hour meeting with the observer after the visit and it was finally used as material in a two-hour discussion within the local GP-group The observer took the role of facilitator and not of assessor, the GP was stimulated to comment on his or her own feedback and practice profile and was asked to formulate intentions for improvements The effect of such feedback is still uncertain it is not yet clear to what extent the providing of personal or expert advice as part of the feedback will improve its effectiveness [39 40] In a meta-analysis of 27 studies (controlled studies on the effectiveness of feedback and reminders

on diagnostic and preventive care in ambulatory care) Buntinx et al conclude that feedback and reminders may reduce the utilization of diagnostic tests, and they may improve conformity to standards of performance of doctors [41]. Feedback strategies seem to have a potential value, but physician profiling is unlikely to be the right type of feedback or performance improvement [42]. This is in contrast to earlier work by Deming, which emphasized feedback as the key to changing service processes [43]. However, all these studies concerned clinical test ordering, diagnostic procedures or (reduction of) prescription. Feedback provided by the practice visit method may rather be compared to the feedback given in educational outreach visits. In a literature review of 18 outreach visits - some also including written material and conferences - Thomson and Oxman regarded feedback in an outreach visit a promising approach to modify professional behaviour, especially prescribing behaviour, but its effectiveness for other aspects of practice is not yet known [44].

Education: What the additional textual information and suggestions on adequate practice management, in the prestructured feedback report (see appendix 1), contributed to change, is hard to assess. This additional text was highly appreciated by the participants as well as by the observers, it was regularly used in discussions on the relevance of an indicator and it was reported to have provided the participants with ideas for improvements (appendix 3). However, most studies using printed material did not change performance of GPs or were inconclusive [38]. The effectiveness of the combination of educational material and peer review has not yet been proven [37].

Peer review (and modeling): There is conflicting evidence on the role of audit and assessment in change; some claim effective change from peer review [45] [46] others say it is one of the less effective change strategies in CME [47]. The practice visit included meetings of two hours with the GP-group. Change may be attributed to these meetings, where GPs discussed the feedback reports, interdoctor variation and priorities for change. The meetings were highly appreciated (appendix 3). In his peer review programs Grol attributed change to this type of meetings [46].

For some aspects of management, however, the mutual visit by a peer observer, resulted in significantly more change than a visit by a non-physician observer. This difference may largely be attributed to his or her observing of the practice of a colleague and discussing

the feedback report in a (tête à tête) meeting of about one hour. Another possible explanation is that personal participation in peer visits resulted in a higher level of internal motivation for change than the visits by non-physician observers. In the first part of the visit - observing the practice and chart review - ***modeling*** may have been an important stimulus for change. It may explain why the score on the "content of the doctor's bag", "the level of computerization of medical records", "accessibility of patient information" and "record keeping" changed significantly more in the practice management of peer visiting GPs, because these aspects are part of the observations.

Taking part in the practice visit hardly resulted in further CME, professional training or any other actions to improve practice management skills (appendix 3), in spite of our attempts to make the method as stimulating as possible. The method did not offer direct advice on congruent training, when change was indicated. The scant opportunities for training practice management skills and the low perception of what can be gained from training these skills may have been more of a bottleneck, though. Also, GPs tend to select subjects for education and improvement in fields that interest them, not necessarily their weak spots. It may require additional efforts (for example, organizational or financial incentives, the help of facilitators) to secure a better link to CME or training, following a practice visit [42, 48].

The effects of taking part in a practice visit on practice management found in our study should be looked upon critically. The study had some limitations. First of all randomization was not optimal, because one group refused to participate in peer visits. Then randomization itself may have had some (negative) effect on the outcomes, because its top down approach may have interfered with the sense of ownership that people involved in audit and QI want and need [49]. Participants sometimes ventilated irritation that they could not do it their way (e.g. look around the practice their way, choose their own observer) and hence one group declined participation. The selection of motivated groups may have been a source of positive bias. This was logical, since at the start of the recruitment, the practice visit was quite a considerable innovation for general practice. A control group without any intervention would have been desirable, but was very difficult to set up and data collection on practice management would certainly have had substantial influence on the control practice.

A period of one year is perhaps not sufficient to measure change. Some aspects of practice care may only change after years (e.g. workload, delegation, collaboration); others are easier to change such as "the content of the doctor's bag", but these changes may disappear quickly. Besides, the practice visits may have accelerated changes that were already on the verge of being implemented. Finally, maybe not all changes can be attributed to the practice visit, since practice management changes over time due to many other influences.

The comparison of the two approaches - peer visits versus visits by non-physician observers - did not solve the problem of "who is the most appropriate person to make a practice visit?". That might have asked for a randomized controlled study in which both types of observers would have performed exactly the same program. When comparing both programs, however, not only effectivity has to be taken into account. Peer visits require half a day more investment of the observing peer, which may have led to less appreciation of the peer visit program. The extra investment and the rather tedious tallying activities required, may have contributed to a less positive opinion on the visit compared to the practice visits of non-physician observers. It is therefore not possible yet to choose for one of both programs and further studies are needed to optimize practice visits.

There may be no magic bullets for improving the quality of health care, yet a range of interventions is available that can lead to important improvements in professional practice and patient outcomes [50]. A practice visit probably is such an intervention.

8. FURTHER RESEARCH AND DEVELOPMENT

Our study can be seen as a first comprehensive attempt to study the value of a method to assess management in general practice, a practice visit method, that helps the GP to select aspects in need of improvement. In this final section recommendations and issues for further research and development will be described.

The domain of practice management

As part of the project a description of the domain of practice management in general practice has been developed containing about 2400 different aspects of management (the Checklist of Practice Management). This description has been used as a thesaurus for selecting indicators for assessment and provides a near complete overview of all relevant items of practice management. If a GP scores low on certain dimensions in the assess-

ment, the list may help to detect missing concrete aspects of that dimension, which were not included in the assessment The 'Checklist of Practice Management" is therefore an integral part of the assessment aimed at improving practice management Its objectives - being a tool for quality improvement to be used in setting priorities and making plans after the practice visits - should be made more clear to participants in practice visits As drawing up guidelines may be a powerful tool for change, further development should be undertaken to decide which indicators in the Checklist can be Dutch College Guidelines or College recommendations for GPs (benchmarking)

Further development of the visit method to assess practice management

Both validity and feasibility of the practice visit method would improve, if data on indicators were collected and feedback were provided on the appropriate level the level of the practice or the level of the GP This will require questionnaires on both the GP and the practice level for patients, GPs and assistants as well as the observer Adapting the method in this way may well be combined with the introduction of new indicators and new reference numbers as well as improvements in layout and changes in the procedure of the practice visit Such a practice visit method is currently being developed by the Centre for Quality of Care Research and the Dutch College of GPs The changes will also require adaptation of the procedures of the practice visit, which could benefit from additional improvements both in logistics and design to increase further feasibilty and acceptance The moment of the visit should be as pleasant and relaxed as possible and asking for minimal paperwork during the visit (such as processing questionnaires) The paperwork may be done in advance by mailing and returning questionnaires beforehand in order to prepare the feedback report partly before the visit

Practice visits by trained non-physician observers is a feasible and acceptable approach and it was appreciated better by the participants than mutual visits by peers Yet peer visiting resulted in more change Combining the strong aspects of both approaches of practice visiting may be a promising alternative Mutual visits by peers with assistance of a trained non-physician observer - teaming up and dividing activities - may result in more change without undue decrease in feasibility and acceptance Division of the observational tasks and paper work between both peer observer and trained non-physician observer will also reduce the duration of the visit even further, making such a "practice visit duet" quite appealing This is presently tested

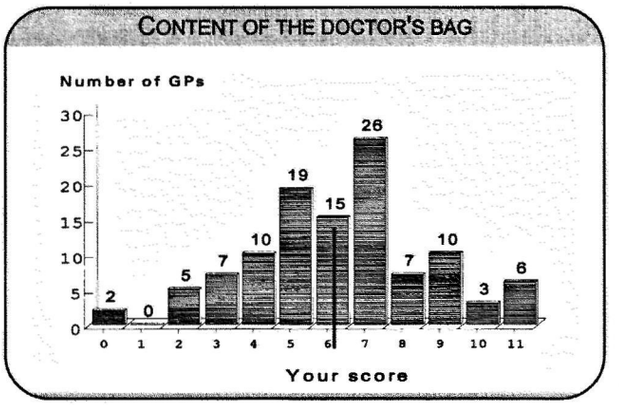
I EQUIPMENT

Content of the doctor's bag

	number	reference
29 O1 Number of vials (out of 10) in vial case	9 vials	9,5 vials
30 O1 Number of vials (out of 10) not yet expired	7 vials	8,2 vials
	yes - no	
31 O1 Vial inventory	☐ ☒	32,1%

OTHER IMPORTANT ITEMS IN THE DOCTOR'S BAG

32 O1 referral letters	☐ ☒	54,1%
33 O1 sticks for urinary examination (not expired)	☒ ☐	43,5%
34 O1 sticks for blood glucose (not expired)	☒ ☐	67,3%
35 O1 thermometer	☒ ☐	65,1%
36 O1 urinary catheter	☒ ☐	60,0%
37 O1 steristrips	☐ ☒	36,4%
38 O1 geudal airway	☒ ☐	71,6%
39 O1 mucus extractor	☐ ☒	26,4%
40 O1 nasal ribbon gauze	☐ ☒	22,7%
41 O1 $ß_2$-sympathicomimetic in spray	☒ ☐	83,5%
42 O1 diazepam rectiole	☐ ☒	90,9%
	+	
Your total score 'yes' and the average sum score	....6.....	**6,2** average sum score



agement is about and give them experience in using instruments for quality improvement.

Practice visits may gain a clear place in reaccreditation or recertification procedures in the future, for instance by making regular participation in practice visits conditional for being recertified as a GP as now is done in other disciplines.

Finally, data collection in practice management using our assessment method may be of use for policy makers at a district and central level to tune strategic policy decisions. For example, it would be relevant to know whether practices in deprived areas differ from regular practices and what support they need for improvement of their practice management.

Practice management and its relation to other aspects of general practice care

The results of this study allow comparison with the results of future research on practice management to detect trends. Because practice management has become measurable, the relation of specific aspects of management to other aspects of general practice care can now be established better. For example, it would be interesting to study the relation between (aspects of) practice management on the one hand and medical knowledge, performance (process) or outcome parameters on the other. A study on the relation between practice management and clinical performance has been prepared.

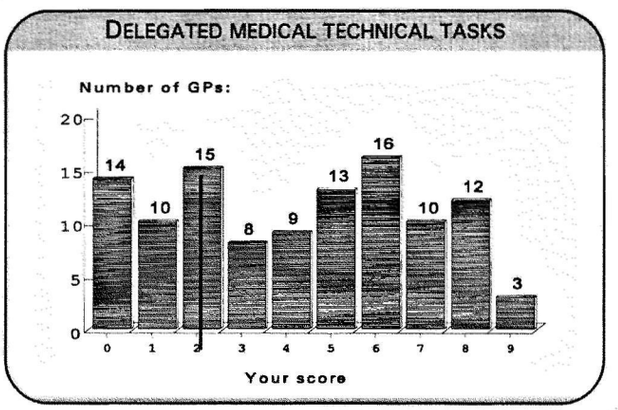
The practice visit method is only a first attempt to develop a valid, reliable, acceptable and feasible practice visit method. The VIP is the result; we may see this new method as one important step in a consorted effort of the professional organizations to help GPs and their practices in delivering optimal care.

The increasing demands of the public and the definition of good quality of care require high flexibility of GPs and the ability to change. Practice visits may offer adequate support to GPs who are oriented to keeping up with the demands of general practice.

II DELEGATION AND COLLABORATION

Medical technical tasks (Delegated to the practice assistant)

		yes-	no	reference
1 A2	removing sutures	☒	☐	67,9%
2 A2	vena punction	☒	☐	52,7%
3 A2	ear syringing	☐	☒	58,2%
4 A2	liquid nitrogen application to warts	☐	☒	62,0%
5 A2	examination and follow-up of cardiovascular patients	☐	☒	37,3%
6 A2	treatment of small (cut-)wounds with glue	☐	☒	28,4%
7 A2	audiometry	☐	☒	42,7%
8 A2	making an EKG	☐	☒	39,1%
9 A2	pressure gradient bandage in leg ulcer	☐	☒	26,9%
		+		
Your total score 'yes' and the average sum score		**...2.....**		**4,1** **average sum score**



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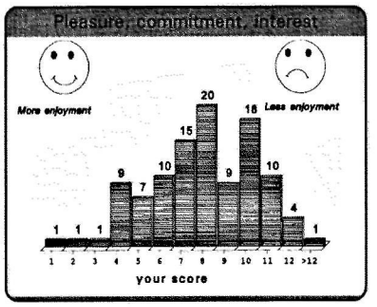
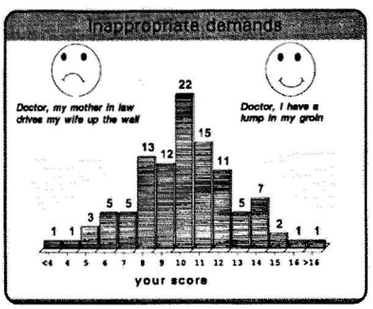
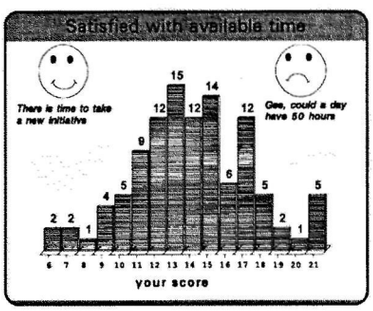
VII b JOB STRESS

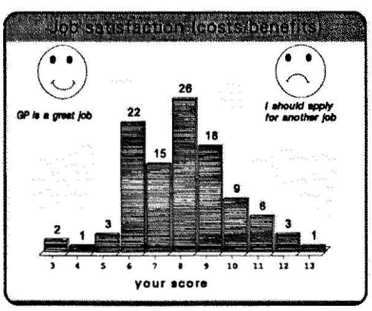
The lower the score, the more indicative the statement is for that GP.

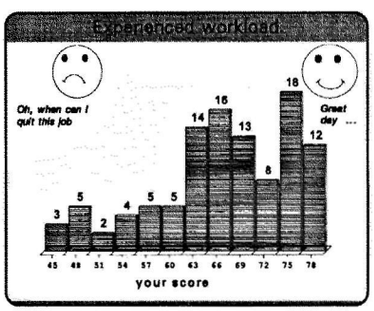
			VIP-score	SD
1a	H8	you work with pleasure, commitment, interest	7,9	± 2,6
1b	H8	you experience inappropriate demands	11,1	± 2,8
2	H8	you are satisfied with the available time	13,9	± 3,3
3	H8	your job satisfaction is high (costs/benefits)	7,9	± 1,9
4	H8	the experienced workload is high	66,3	± 8,8











I EQUIPMENT

Content of the doctor's bag (Checklist I.L.)

The NUMBER OF VIALS IN THE VIAL CASE concerns 10 vials: Atropine, adrenaline, clemastine (Tavegil), diclofenac (Voltaren), glucagon or glucose 50%, a morphinomimetic, a corticosteroid, a bronchospasmolytic, a neuroleptic and diazepam.
Each vial is indicated for a specific emergency justifying its presence in the bag. So none of these should be lacking.The NUMBER OF VIALS NOT EXPIRED should be zero, otherwise the routine for replacement is not working well. The advice is to have your assistant or pharmacist check the bag halfyearly). Consult for this purpose the VIAL INVENTORY (part of the recommendations of the Dutch College for the equipment out of office[1]) that helps you organize the maintenance properly. Keep the vial inventory in preferably the special Dutch College vial case, where it fits between the upper and lower case containing the vials.

OTHER IMPORTANT ITEMS IN THE DOCTOR'S BAG.
REFERRAL PAPER helps to write more structured referral letters, also in acute situations (for example when you wait for the ambulance).
STICKS FOR URINARY EXAMINATION are indispensable in acute situations to prove/exclude UTI, kidney stones, (glucose) reduction etc.. Two or three sticks in the bag are sufficient, because they quickly expire. The 'long' multitest-strip with an comprehensive range of tests is recommended.
STICKS FOR BLOOD GLUCOSE (some already have a blood glucose meter in the bag) can help you diagnose or exclude hypo/hyperglycemia.
The remaining items will not be discussed in detail here and are more or less selfevident: THERMOMETER, URINARY CATHETER - a catheter precoated with a lubricant is recommended - STERISTRIPS, GEUDAL AIRWAY, MUCUS EXTRACTOR (for convulsive babies or for a debilitated patient with an airway obstructed by mucus), NASAL RIBBON GAUZE (for epistaxis), β_2-MIMETIC, and a DIAZEPAM RECTIOLE (for convulsions in babies; an alternative is to insert a vial of diazepam rectally with the help of a syringe without a needle). The β_2-MIMETIC ideally goes with an antechamber that can be stored in the car, because it otherwise fills the doctor's bag.

Don't forget to ask your colleagues for items they consider useful in their bag. Consult also the 'Checklist of Practice Management' to look for missing items in your equipment.

[1] *Dijkers FW. De uitrusting van de huisarts onderweg. NHG-bouwsteen praktijkvoering P13 [The equipment out of office] Utrecht: NHG, 1989.*

APPENDIX 2

How well does the VIP reflect aspects of the GP's practice management; how often reported the GP change (opinion of the participants; percentages; nine-points scale; N=73)

	(very) good (score 8-9)	insufficient (score < 6)	Changed?
I Premises and equipment			
Equipment in treatment/examination room and lab	69%	1%	21%
Hygiene (disinfection/sterilization)	64%	8%	19%
Use by GP of equipment, diagnostics and therapeutics (/quarter)	63%	3%	14%
Content of the doctor's bag	83%	4%	39%
II Delegation and collaboration			
Medical technical tasks delegated to the practice assistant	73%	0%	36%
Laboratory tasks delegated to the practice assistant	70%	4%	9%
Secretarial/organizational tasks delegated to the practice assistant	69%	3%	16%
Collaboration with colleagues (GP-group)	49%	13%	14%
Collaboration with partners in primary care	59%	6%	7%
Collaboration with partners in secondary care/hospital	53%	13%	10%
Collaboration with homes for elderly and other care providers	51%	8%	5%
III Service and organization			
Patient opinion on accessibility	65%	6%	20%
Patient opinion on organization of surgeries/availability	67%	2%	25%
Accessibility of patient information	62%	9%	37%
Organization of preventive activities	56%	5%	13%
IV Record keeping			
Recording using the SOAP-system	78%	3%	29%
Recording of prescriptions	77%	5%	28%
Basic data or list of problems/illnesses	85%	2%	27%
V Organization of quality improvement			
Assessment on outcome and a year report	65%	5%	6%
VI Workload	75%	5%	16%
VI Job stress	74%	4%	20%

APPENDIX 3

Opinion of the participants on the VIP used in the visit after one year; percentages (N=76)

		(strongly) agree	neutral	(strongly) disagree
General appreciation of the VIP				
1	The VIP meets its objective: improvement of practice management	81%	15%	4%
2	The VIP is sufficiently clear and understandable	95%	5%	0%
3	Participating in practice visits with the VIP was enjoyable	75%	22%	3%
4	The effort of participating did not outweigh the benefits	26%	23%	51%
5	The VIP enhanced my interest in practice management	66%	18%	16%
6	The VIP resulted in actual changes	58%	21%	21%
7	The VIP results in more change than normal postgraduate training	68%	24%	8%
8	The VIP is an excellent starting point for postgraduate training	68%	23%	9%
9	The VIP stimulated to actually participate in congruent training	26%	42%	32%
10	I would recommend the VIP to every GP	86%	10%	4%
The procedure of the VIP				
11	Recruitment should be per individual rather than per GP- group	23%	17%	60%
12	The VIP is too confronting, exposing sensitive differences in the GP-group	12%	2%	86%
13	A visit by a non-physician observer is preferred over a visit by a colleague	64%	24%	12%
14	The non-physician observer does not add much to the feedback picture	21%	15%	64%
15	The non-physician observer helps to focus on the right topics in the feedback	74%	18%	8%
16	The final discussion in the group is a valuable part of the procedure	70%	24%	6%
The appreciation of the feedback				
17	The feedback of the 2nd VIP is a substantial improvement over the 1st VIP	66%	30%	4%
18	The feedback is much too detailed	13%	18%	69%
19	The systematics of the feedback are complex and not transparant	7%	13%	80%
20	The feedback is relevant for optimal practice management	87%	10%	3%
21	Some aspects in the feedback receive disproportionate attention	19%	20%	61%
22	The total feedback gives an accurate picture of my practice management	89%	8%	3%
23	Frequencies of indicators for reference are indispensable for good feedback	91%	9%	0%
24	Averaged scores and histograms provide useful extra insight	77%	22%	1%
25	The explanatory text conveying the indicators is instructive	72%	25%	3%
26	The layout can be improved	11%	42%	47%

APPENDIX 4

Opinion of the participants on the necessary data, on the duration of each part of the VIP and on the appropriate time for repetition of the VIP; percentages, (N=73)

Opinion on the numbers	**actual number**	**too many**	**too few**
I find the number of patient questionnaires	30 questionnaires	14%	11%
I find the number of patient records	20 records	4%	14%
I find the number of aspects of the feedback	30 aspects	7%	3%
Activity in the assessment	**estimated time**		
Filling in the questionnaire for the GP	45 minutes	7%	4%
Preparation of the visit	25 minutes	5%	3%
Organization of the patient questionnaire	11 minutes	3%	10%
The discussion afterwards with the observer	60 minutes	0%	11%
The total time spent on the visit	105 minutes	5%	5%
66% of the participants prefer **regular practice visits,**	4% every year		
	40% every 2 years		
	26% every 3 years		
	30% every 5 years		
24% of the participants prefer **now and then a visit,**			
10% of the participants do **not want a visit anymore.**			

VII WORKLOAD AND JOB STRESS

VIIb Job stress

This paragraph is about job stress, for which we used five scales from the NIVEL-study on burnout of GPs[2]. It succeeds the paragraph on workload. Scores on both workload (hours per week) and the five indicators for job stress are useful data for the evaluation of your time management Evaluation concerns information on job stress' and 'experienced workload' on the one hand and 'the ability to cope on the other hand If strain and the ability to cope are not in balance, the GP becomes distressed, better known as burnout We will not go into detail on the concept 'burnout' in this addendum. The average scores of the 110 GPs in our study group did not differ significantly from the more representative figures of the NIVEL-study
The association between workload and job stress in our study was weak GPs spending long hours in direct and indirect patient contact and GPs with a large total workload per week were less satisfied with the available time. GPs involved in professional meetings and activities experienced less workload "Many (evening, night and weekend) duties" (more night on call) was not surprisingly associated with high scores of jobstress, however personal list size was hardly associated with job stress Job stress is less for GPs with a practice at home (who made significantly more house calls), mainly their score on the aspects 'satisfaction with available time' and 'experienced workload' was significantly lower. However characteristics of the GP and workload in hours per week did not explain differences between GPs in job stress Other factors like **(de)motivation, (disappointment in) expectations, debts or financial stress, (lack of) support of colleagues or friends, overdemanding patients, personality and environment (urbanization)** are probably more important predictors of job stress These factors deserve analysis and an appropriate setting for that would be a Supervision or Balint group The sum scores on the scales for burnout are not easy to interpret The sentence "the lower the score, the more indicative the statement is for that GP" is not very practical Therefore use the histograms and the following text

"YOU WORK WITH PLEASURE, COMMITMENT, INTEREST" (JOB SATISFACTION) If you score below the average of the Dutch GP (below 8,0) you are likely to experience above average enjoyment or pleasure in your work as a GP Do you score higher than 8,0, you are less happy with your work and you should combine that information to figures like "Total workload" (including the 'difference between actual and wanted workload' and characteristics of the GP or practice such as personal list size, percentage assistance per GP, time for optional activities, urbanization etc Don't forget to involve in your analysis the above mentioned factors in bold, which proved to associate with job stress in other studies Make these combinations also for the following scores

"YOU EXPERIENCE INAPPROPRIATE DEMANDS" The scale "experiencing inappropriate demands by the patients" measures the GP's feeling about having to deal with matters for which the patient does not need to consult the GP It reflects the extent of feeling overdemanded by patients The lower the score, the more you feel overdemanded

"YOU ARE SATISFIED WITH THE AVAILABLE TIME" This reflects your experience of time Pressure of time can be defined as the discrepancy between available time and workload Always being in need of time contributes enormously to job stress and means too little time for your family or for leasure High job stress and too little spare time are considered a negative aspect of our profession by 40% of all GPs in the NIVEL-study.[1] Especially GPs with a reactive style of practice management suffer from job stress Each day again they start shovel ling away that pile of complaints and problems But due to overly optimistic planning the pile is happens too be bigger than expected, adding to the existing stress Reactive management resuls in job stress and finally in burnout Proactief management or being ahead of problems instead of behind is a solution for this problem Therefore a high score on this indicator could well mean too much job stress and is a priority for the GP It deserves proper analysis and action, before you make any other new plans Analyse workload, make decisions

"YOUR JOB SATISFACTION IS HIGH" Though there are still many satisfactions in the job, GPs are increasingly experiencing frustrations and dissatisfactions. Poorer status (lack of respect in relation to hospital doctors and in the eyes of patients), increased demands in terms of quality (top-down clinical guidelines) and greater insecurity, a more intense relationship with (not always supportive) colleagues (more competition, threat), less opportunity for another job are top of a list of possible causes for less job satisfaction If you don't feel rewarded for what you invest, you score high; a low score means you are satisfied with your job Demanding and unsatisfied patients contribute considerably to less job satisfaction; grateful patients, appreciating colleagues and others to more job satisfaction

"THE EXPERIENCED WORKLOAD" is about physical and mental exhaustion, caused by working A high score indicates little physical and mental job stress and you are probably in good shape at the end of a heavy day, a low score the opposite.

The five indicators for job stress cannot be ignored Addressing inadequate time management is a priority It is the key to a successful life as a GP and prevents you from looking for another job.

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[2] *Lit Dierendonck van D, Groenewegen PP, Sixma H Opgebrand Een inventanserend onderzoek naar gevoelens van motivatie en demotivatie bij huisartsen Utrecht NIVEL, 1992*

APPENDIX 1
VISIT INSTRUMENT TO ASSESS PRACTICE MANAGEMENT (VIP)

The following pages are examples of the 34 scales, used in the Visit Instrument to assess Practice Management It is to give the reader an impresson of the feedback of an imaginary GP, when participating in the VIP

In reality scores on questionnaires are transferred to the prestructured feedback report

O refers to the observer, A to the practice assistant and H to the GP (Home doctor in the Dutch language) Brief hints to improve your practice can be found on the left pages

The reader may be tempted to plot himself on the "content of the doctor's bag" and "medical technical tasks delegated to the practice assistant" Job stress does not permit easy plotting in this example Comparing yourself with Dutch GPs is fun and helps to experience some of the feedback

In the more distant future a possible improvement is, for instance, direct input of data in the computer. Immediate feedback using a notebook with printer on the spot may be welcomed by both observers and GPs Software could be designed, which attaches educational texts to default aspects and which selects priorities for change on the basis of scores. Both possibilities could help to make feedback more accessible and effective assisting the practice in making annual reports and quality improvement plans, for example.

Improving the effectivity of the practice visit

A practice visit to assess practice management can be considered a needs assessment of the practice organization pointing out priorities for change It may also serve as a starting point for a practice that wants to reset its compass. However, many plans for change only result in good intentions In the questionnaire after the second visit GPs indicated that the practice visit should have more follow-up to be truly effective (appendix 3) Methods to support local GP-groups in implementing necessary changes may be helpful in this respect A facilitator may help to organize the follow-up of a practice visit and help the practice towards a more explicit and continuous process of quality improvement The combined process of needs assessment, priority setting and making plans for concrete change may have an effect on team building [51], needing maintenance by a facilitator who provides regular support. So particularly integrating the practice visit method into continuous and systematic quality improvement is the challenge. Research on the effectiveness and feasibility of such "quality systems " should be set up.

Possible future applications of the practice visit method

The potential of the practice visit method for measurements in research projects is appealing. It is a quick and thorough method of collecting background information on a practice with benefits for both parties Practice visits by means of our method are presently used in several research projects in Dutch general practice. There are, however, other possible applications For instance, to assess training practices the training practices should meet specific quality criteria; regular practice visits during the vocational training may improve their practice management. Obligatory participation in a practice visit may therefore be made conditional for continuing as a GP-trainer. As part of their vocational training trainees may conduct a practice visit as observers in order to learn what practice management is about. This would also provide the trainees with a notion of what quality man-

II DELEGATION AND COLLABORATION

Medical technical tasks (Delegated tot the practice assistant) (Checklist II.B.3.c.)

REMOVING SUTURES requires little training and is easily delegated to the practice assistant. It does however take away the evaluation of the GP's surgical result. This may - certainly in the beginning of one's career - be quite important. Clear instructions on which results the GP wants to see may help to get feedback for the GP on his or her surgery and for the assistant on her handling of the removal.
VENA PUNCTION can be quite difficult. The assistant should know after how many attempts she should call the GP (two attempts). Discuss with your assistant all safety procedures on avoiding blood contamination.
EAR SYRINGING may be done faster by the GP, unless you pay attention to proper training and regular follow-up e.g. once a year. A big glass syringe is the most efficient instrument, but often too big for the hands of the practice assistant. A repetitive syringing device often gets stiff needing maintenance with glycerine or silicone spray. A tooth pick may not have a waterjet powerful enough to remove the cerumen. Quick removal is more convenient for the patient and should steer the decision on the best method. Prevent the patient from coming to the practice more than once by asking -when such a patient calls - to insert a bit of oil in the ear to soften up the cerumen. (It is a common problem, so mention this advice also in the brochure of your practice) Instruct the assistant to always inspect the ear in advance (there may be no cerumen! or a perforation) as well as after the syringing. When she sees - before or after - a (possibly pre-existant) perforation or when the patient becomes dizzy, the GP should be called (check water temperature!) If the cerumen is too sticky, use the existing polyalkohols to resolve it quickly, instead of sending the patient home.
LIQUID NITROGEN APPLICATION TO WARTS by the practice assistant requires a careful protocol, indicating the warts that can be treated without supervision. (e.g. warts on hands and feet in young people) and the warts that need a first assessment by the GP. Also clear instructions on the technique need to be laid down in a written protocol and to be evaluated.
If the nitrogen application is not properly monitored, patients often come back unnecessarily (warts on feet are reluctant, freezing has been insufficient or one is freezing a clavus or histiocytoma instead of a wart). This is a sign of bad or insufficient instruction and certainly of bad evaluation. Inadequate information to patients is another possible trap. Patients may start to think that treatment is a medical necessity, since in their perception the practice declared war on warts. When correctly informed on the selflimiting nature of warts, patients would probably make different decisions (if not the practice assistant or the GP him or herself). Some GPs in the Netherlands therefore even stopped treating warts altogether. Treating mollusca is quite unnecessary and should not be done unless the mollusca activate eczema. It may be clear that delegation of the treatment of warts is not easy asking for thorough preparation, instruction and continuous evaluation.
EXAMINATION AND FOLLOW-UP OF CARDIOVASCULAR RISK PATIENTS The practice assistant could participate in the practice's management of these patients, greatly improving the quality of care, but hardly saving time for the GP, certainly not in the beginning. This task is even more difficult than the follow-up of diabetics, requiring training and regular meetings with the assistant for guidance and evaluation. The task not only increases the quality of care but also the job satisfaction for both the practice assistant and the GP. The College provides instruction material.
TREATMENT OF SMALL (CUT)WOUNDS WITH GLUE is best learned by the practice assistant, if the GP assists her to glue the first few wounds. It should be clear to the assistant, which treatment the wounds should have in advance and which wounds need your inspection beforehand.
AUDIOMETRY is time consuming also for the practice assistant and this should be taken into account for the decision whether it is a task for the practice or not. Especially children 'under five' ask a lot of patience. If the practice has audiometry as a service, it is invariably done by the assistant. Another requirement is 'silence in the examination room'. Inform yourself on a practical way to store the results.
MAKING AN EKG is invariably delegated to the practice assistant. The GP should maintain his own dexterity by making an EKG together with the assistant every once in a while. That may be a good moment for evaluation of this task as well, especially of putting the electrodes in their correct place. Delegate also the correct and practical storage of the EKGs, for which the Dutch College EKG chart is recommended.
THE PRESSURE GRADIENT BANDAGE FOR THE TREATMENT OF LEG ULCER is laid down in the College guidelines on leg ulcers. Delegation to the practice assistant (or the practice nurse doing the home visits) is recommended and routine should be build up. A training course on leg ulcer treatment for the assistant is recommendable. Follow-up is indispensible and inspection of the wound as well as changes in strategy of treatment require the presence of the GP, vigilance and a joint approach.

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SUMMARY

INTRODUCTION

This study concerns the quality of general practice management and organization Assessing the quality of general practice care asks for the development of assessment instruments to provide feedback on performance and quality of care However a valid and reliable method to assess practice management was not yet available

Practice management is an important structural aspect of care deserving attention and comprehensive assessment, since many of the possible improvements in quality of care must be achieved in the organization On site assessment or a practice visit is considered the obvious procedure in the medical profession and is increasingly applied for the assessment of structure and process - especially in hospitals by specialists -, despite the fact that a practice visit is intrusive, may cause organizational problems and requires commitment of the participants

The study was directed towards the development and evaluation of a valid, reliable, feasible, effective and acceptable method for assessing the management of the GP and the organization of his or her practice in a practice visit

The introduction to the thesis (***chapter*** 1) focuses on the relevance of the assessment method and the analysis of the literature The general literature on management and organization as well as on quality assurance (QA) was studied for guidance and we studied QA and management and organization in general practice in more detail Next, the national and international medical literature was studied more extensively in search of studies of assessment methods especially of practice visits methods (both procedure and content) that could serve our purposes We used a Medline search, looked through relevant journals from 1988 onward and used the snowball method

In the Netherlands the concept 'praktijkvoering' is generally accepted and concerns those aspects, that - next to aspects of care - are conditional for the quality of patient care In the Spanish/Portuguese and French literature equivalents of the word 'praktijkvoering' are used for the same concept In this study we decided to use and define the word practice management' as the equivalent of 'praktijkvoering', though in the English language practice organization is used synonymously Organization however concerns the practice rather than the GP

In order to develop an assessment method first of all the domain of practice management has to be defined However, we did not find an exact description of the domain of practice management or a definition of its boundaries in our study of the literature

The existing practice visit methods in the predominantly Anglo-Saxon literature varied considerably in content (all aspects of care or only structural aspects), in procedure (number of observers and their background, duration feasibility) and in purpose (selection, education or both) Uniformity in assessment that used a practice visit method, was further hampered by the existing lack of guidelines and criteria

In the literature some useful handles for the development of a practice visit method were found Firstly introduction of guidelines has been established to be an effective strategy for change Also a combination of information transfer and learning through social influence and management supported strategies proved to be effective in most situations but was never studied for practice visits Peer review as an assessment method was better appreciated and resulted in more change than any other strategy in quality improvement, but colleagues have drawbacks in doing the visit and in giving feedback

Yet, quite a few problems are unresolved whether the practice or the GP should be judged whether one should give comments or recommendations and whether attainment (what has been accomplished) or development (the process of quality improvement) should be judged In short many questions remained on content and procedure of practice visits and on Who assesses in a practice visit, how is feedback provided and on what subjects?

A valid, reliable acceptable effective and feasible practice visit method to assess practice management with a pure educational objective would be a valuable asset and its evaluation could shed light on some of these questions

Published data on variation in practice management are also scarce Though studies on variation have been carried out on specific aspects of practice management e g delegation, record keeping, workload and job stress most of these studies need updating New and complete information on variation and on factors explaining the variation in practice management is in demand and important for policy advice to GPs, practices and policymakers but also for underpinning an assessment method on practice management

This led to the following research questions:

What is the value of the visit method for assessing practice management?

- What items and features are relevant to general practice management and organization in the Netherlands and is it possible for general practitioners and experts in practice management to agree on a systematic, detailed and practical description of these items and features?
- What is the validity, reliability, feasibility and acceptance of an assessment method, based on this description of relevant items in practice management?

What is the variation in practice management between practices and GPs and which factors can explain this variation?

To what extent does the practice visit result in change of practice management?

- Does it make a difference to be visited and assessed by a colleague on the basis of mutual assessment or by a trained external non-physician observer?

The first research question will be addressed in chapters 2 and 3, the second question (on variation) in the chapters 4-7 and the third in chapter 8.

In *chapter* 2 we defined 'practice management' and established its domain and content systematically in a consensus procedure, in which 40 GPs participated, 25 of them specialized in various subjects of practice management and 15 using the checklist during postgraduate training to self-assess their practice. The description of the domain of 'practice management' resulted in a checklist dividing and listing 2410 relevant items in main and subcategories into proceedings, functions, tasks and objects. From this framework only items discriminating between GPs and between practices were selected for the development of the practice visit method The method was next tested by 59 general practitioners and helped to determine relevant and discriminating indicators of practice management. The practice visit method included a program for a visit to the practice and various instruments to obtain data from the GP, from his/her assistant and from patients. The data were entered in a prestructured report, providing feedback to the GP. Factor analysis provided clues on dimensions of practice management and valuable information to optimalize data collection on practice management and to improve or adjust the procedure

The evaluation by the participants supported the validity of the method and the participating GPs recognized their practice management in the feedback report. The practice

visit method left doubts on its feasibility mainly because visiting colleagues did not like the administrative duties The first draft of the method was promising but needed further development

In *chapter* 3 the adapted practice visit method - the VIP (VIP = Visit Instrument to assess Practice management) - was tested in a larger study of 110 GPs in 88 practices to select again discriminating indicators on the basis of their frequencies Factor and reliability analyses were performed to determine useful dimensions of practice management Out of the 249 indicators included in the VIP 208 discriminated sufficiently at practice level or at GP-level Factor analysis resulted in 24 dimensions leading - together with the dimensions for workload and job stress - to a taxonomy of practice management The scores on dimensions and indicators showed marked variation between GPs and practices Linear regression analysis determined whether it was possible to discriminate between GPs and practices with different characteristics on these dimensions Training practices scored higher on 7 dimensions, single-handed and dispensing practices scored lower on the number of tasks delegated to the practice assistant, but higher on accessibility and organization of surgery/availability

We concluded that the taxonomy and dimensions of practice management were in line with our theoretical framework and other classifications The results were encouraging and supported the content as well as the construct validity of the VIP Participants recognized their practice management in the aspects presented in the feedback It was possible to discriminate between groups of GPs and practices establishing the value of the method for assessment

In *chapter* 4 structural aspects of the practice organization concerning premises equipment and hygiene were analysed to determine variation and possible explanations for the variation between practices and GPs

In the study of 110 GPs scores on indicators of premises and equipment and the use of equipment were analysed Fifty six indicators proved to be discriminatory (more than 5% or less than 95% available in the practice) The factor analysis showed four distinct components of equipment equipment of the treatment/examination room and the laboratory, hygiene, use of equipment diagnostics and therapeutics and content of the doctor s bag All components showed marked variation on both indicators and dimensions Practices

that were not single-handed, practices with full-time GPs or practices with at least a full-time assistant per GP scored higher on most components of equipment Urbanization, personal list size and having a qualified assistant did not explain much variation 'Hygiene' hardly differentiated between different types of practices

Single-handed GPs scored significantly lower on the dimension ' use of equipment, diagnostics and therapeutics', whereas full-time GPs and GP-trainers had a higher score Personal list size and and having participated in the vocational training were not associated with these dimensions of premises, equipment and hygiene

The results are in line with findings in the UK that investment in practice equipment shows marked variation between practices In the UK single-handed practices had significantly less equipment, because of the existing disincentive to spend money on it, a situation comparable to the Netherlands To reduce unwanted variation College guidelines on premises and equipment in General Practice are recommended

In *chapter* 5 we studied the tasks, that are delegated to the practice assistant, interpractice differences in such tasks and factors influencing these differences The practice assistants answered questions on tasks that are delegated in some practices, but not in others Per visit 15 patients were asked to report on their opinion on the extent to which tasks were delegated to the practice assistant and if she was perceived as an obstacle in contacting the GP

Thirty five indicators in the assistant questionnaire were discriminated (more than 5% or less than 95% delegated) Factor analysis showed five different sets of tasks of the practice assistant medical technical tasks, laboratory tasks, informing patients on diseases medical organizational tasks, and secretarial tasks Single-handed practices, dispensing practices and country practices delegated less to the assistant, while practices disposing a treatment room to the assistant delegated more tasks List size of the practice and the percentage of practice assistance per GP were not associated with the number of delegated tasks Patients were significantly more satisfied with qualified practice assistants (over unqualified assistants)

Comparison with research a decade ago showed little progress in the number of tasks delegated to the practice assistants except for some specific tasks recommended by the Dutch College such as diabetes check-ups, PAP smears and nitrogen treatment of warts Recommendations or guidelines on delegation, if applicable, should be part of guidelines on the quality of care Availability of training for practice assistants is recommended

In *chapter 6* we studied differences between practices and GPs in service to patients and practice organization (delegated tasks excluded) and factors that may explain these differences. Evaluations by patients visiting the practice, information provided by the GP as well as data collected by observers were used in the assessment of these aspects of practice management. Out of the 47 indicators selected 41 indicators discriminated. Factor analysis of the 41 indicators revealed five different components of service and organization of service: accessibility, organization of surgeries/availability, use of patient information on diseases, accessibility of patient information for the GP or patient, and organization of preventive activities. We found important variation between GPs and practices on these dimensions. Waiting time before being called in for consultation (11 minutes on average) was not associated with any other dimension. The same was true for 'the GP is disturbed during a consultation'. These aspects of management can be seen as independent indicators.

Single-handed practices and practices, which had fewer patients in their locum tenens group, scored higher on accessibility, rural practices scored higher on availability. Practices with at least a full-time assistant per GP scored higher on all dimensions. Single-handed GPs made patients wait less before entering the surgery but also used patient information less often during consultations. Organization of prevention scored higher in training practices and lower in dispensing practices and in practices at home. List size of the practice and vocational training did not explain much variation.

Patients provided useful information on important indicators of service. It was difficult to find sufficient discriminating indicators, which suggests good service and limited variation between practices. Practices with more partners had patients who were less satisfied with the service, except for the use of patient information. These findings were in line with comparable findings in the UK, that when practices increase in scale patient satisfaction decreases. Lack of guidelines on service and organization seriously hampers proper assessment of service and organization in general practice. This also includes the assessment of organization of prevention.

In *chapter 7* we studied differences between general practitioners in workload and job stress, factors that may explain these differences and the relationship between workload and job stress. Of the participating 110 GPs in 88 practices 76 GPs worked full-time. We asked the GPs to report on 4 aspects of workload and on five different aspects of job stress.

The total workload per week for full-time GPs was on average 53 hours Excluding 3 hours optional activities (such as deliveries, examinations of patients or sidelines) the total workload was on average more than 50 hours per week an average of 4 hours more than the time the GPs reported they preferred to work Of the full-time working GPs 75% worked more than 48 hours and a quarter more than 58 hours per week As much as 33 hours per week or nearly 7 hours per working day were spent on direct patient contact The GP spent on average less than one hour per day on documentation record keeping and telephone calls somewhat more than one hour per day on call and somewhat more than half an hour per day on consultation together with other care providers

GPs who did vocational training worked with more satisfaction (pleasure commitment and interest) GPs with practice at home were more satisfied with their available time for practice management than GPs who did not work at home and also experienced less workload Experiencing inappropriate demands by patients was hardly associated with any GP-characteristics

GPs with many primary and secondary activities and with a large total workload per week were less satisfied with the available time for practice management GPs having more quaternary activities (professional meetings) experienced less workload

Type of practice (single-handed or group) nor characteristics of the practice assistant made any difference for the workload or job stress GPs having a rural practice having more private patients having a small practice and/or having practice at home experienced less workload The various characteristics of the GP explained not more than 20% of the variance of the workload and even less of the job stress

Different (more personal) factors may explain differences in workload and job stress Further research into these factors is recommended

In ***chapter*** 8 we evaluated the feasibility and effects of practice visits More specifically two programs of assessment of practice management in a practice visit were compared mutual visits and feedback by peers on the one hand and visits and feedback by trained external non-physician observers on the other The design was a randomized intervention study with a follow-up assessment after one year 90 GPs - 46 mutually visited by peers and 44 visited by non-physician observers - in 68 practices were included in the study and 81 (41 and 40 resp) were revisited after a year Differences in scores on the 208 indicators and

33 dimensions of practice management were used to measure actual change between the first visit and the visit after one year.

To evaluate the feasibility of each program - mutual visits by peers or visits by non-physician observers - we asked questions on four aspects: appreciation, acceptance, reported change of the participants and recognition of their own style of practice management in the feedback.

A visit by a non-physician observer was appreciated significantly better, but both programs did not differ much in 'acceptance' by the GP and in 'reported change'. After a year there was significant improvement on the majority of aspects of practice management. Improvement was clearly more noticeable after peer visits, especially for equipment, hygiene, the content of the doctor's bag and for record keeping.

This is probably the first study on the feasibility and effectiveness of practice visits in general practice. It shows that assessment in a practice visit has the potential to become a powerful tool in quality improvement. Change was more outspoken for less complex aspects, accessible for improvement in a year's time, like equipment, delegation, organization of information and record keeping. After a year GPs had improved on workload and job stress and both subjects were invariably the most important points in the discussion of the feedback (as reported by the non-physician observers).

Mutual assessment by peers may be more effective, data collection and giving feedback are better appreciated from a non-physician observer. Peers disliked the data collection and tallying, yet visiting a colleague in another practice - especially the observation of medical records and assessing equipment - probably helped to improve their own practice management. The good test features and the easy program may explain why 90% of the GPs reported to want a follow-up within 2-5 years. Another explanation of this acceptation and appreciation is that the VIP focuses on actual information and feedback. It keeps judgements of the observer to a minimum and yields reliable feedback independent of the observer. Finally, in reality the costs of a practice visit may be equally expensive for both programs (£ 300,- per visit, the GP investment being £ 40 per hour, included organization costs).

The study may have demonstrated the viability of practice visits to assess practice management using our method ('the VIP'). Hopefully the VIP is developed further in order to mature into a regular activity in general practice. This will require new input with data and new analyses. The VIP serves educational, screening and research objectives and can be

expanded with other aspects of care than practice management in a more robust practice visit. Yet practice visits have to compete with other activities in quality improvement and we should not forget that as a voluntary activity practice visits never really grew into a regular quality improvement activity. It may require more support, commitment or reward of the responsible professional bodies. As an educational activity it has to find its place in the process of reaccreditation and recertification to live up to its potential: a powerful tool in quality improvement in general practice.

SAMENVATTING

INLEIDING

In deze studie is de kwaliteit van de praktijkvoering van huisartsen onderzocht Toetsing van de kwaliteit van huisartsenzorg vergt onder meer de ontwikkeling van instrumenten om feedback te kunnen geven over de feitelijk geleverde zorg en de kwaliteit daarvan Echter een valide en betrouwbare methode om praktijkvoering te toetsen bestond nog niet

Praktijkvoering is een belangrijk voorwaardelijk aspect van die zorg en verdient extra aandacht van huisartsen alsook uitgebreide toetsing, omdat veel mogelijke verbeteringen van kwaliteit van zorg op dit gebied liggen

Toetsing in de praktijk zelf oftewel visitatie wordt hiervoor de meest voor de hand liggende procedure geacht in de medische wereld en wordt toenemend toegepast voor toetsing van structurele en procesmatige aspecten van zorg, voornamelijk door specialisten in ziekenhuizen Dit ondanks het feit dat een visitatie nogal indringend is, organisatorisch ingewikkeld is en inzet van de betrokkenen vergt

In deze studie wilden we een valide, betrouwbare toepasbare, effectieve en acceptabele methode ontwikkelen, waarmee de praktijkvoering van de huisarts en de organisatie van zijn/haar praktijk in een visitatie getoetst kon worden

In de inleiding van dit proefschrift wordt de relevantie van het ontwikkelen van een toetsingsmethode voor de praktijkvoering onderzocht en verslag gedaan van de literatuurstudie Om ons te orienteren werd de literatuur op het gebied van management en organisatie en van Quality Assurance (QA) bestudeerd en hierbij werd vooral aan de literatuur over de praktijkvoering van huisartsen aandacht besteed Vervolgens werd de nationale en internationale literatuur intensief bestudeerd op zoek naar toetsingsmethoden in het algemeen en in het bijzonder methoden die deel uitmaakten van een visitatie Hiervoor werd een "Medline search gedaan, werden relevante tijdschriften doorgenomen vanaf het jaar 1988 en werd verder gezocht met behulp van de "sneeuwbal-methode"

Het concept 'praktijkvoering' is in Nederland algemeen gangbaar en betreft die aspecten van het huisartsenberoep, die naast de patientgerichte, zorginhoudelijke aspecten, voorwaarden zijn voor de realisering van goede zorg In de Spaans/Portugese (gestiòn de pràctica clinica, gestão de prática clínica) en de Franse literatuur (gestion des soins de

santé) wordt de letterlijke vertaling van praktijkvoering gebruikt voor hetzelfde begrip. In de Angelsaksische literatuur kwam de term 'practice management' het meest in aanmerking voor gebruik als equivalent voor 'praktijkvoering', hoewel 'practice organization' synoniem is. Organization betreft echter minder de huisarts en meer de praktijk.

Voor de ontwikkeling van een visitatiemethode voor de huisarts(praktijk) was op de eerste plaats een systematisch en gedetailleerde beschrijving van het gebied van de praktijkvoering nodig. Zo'n beschrijving of gebiedsafbakening kwamen wij in onze literatuurstudie niet tegen.

De bestaande visitatiemethodes in voornamelijk de Angelsaksische literatuur varieerden aanzienlijk zowel wat betreft inhoud (alle aspecten van zorg of alleen praktijkvoering) als procedure (aantal observatoren of visitatoren en hun achtergrond, duur, toepasbaarheid) en doel (selectie, educatie of beiden). Het ontbreken van richtlijnen en criteria bleek een belangrijke belemmering voor meer uniformiteit in visitatiemethoden.

In de literatuur werden toch enkele handvatten gevonden, die bruikbaar waren voor de ontwikkeling van een educatieve visitatiemethode. Zo bleek in de eerste plaats de invoering van richtlijnen een effectieve strategie voor het realiseren van veranderingen. Een combinatie van informatieoverdracht en leren door sociale beïnvloeding, gebruik makend van management technieken bleek effectiever dan enkelvoudige interventies. En: intercollegiale toetsing als toetsingsmethode werd beter gewaardeerd en resulteerde in meer verandering dan enig andere methode voor kwaliteitsverbetering bij huisartsen. Collegae hebben overigens ook nadelen wanneer het visitatie of het geven van feedback betreft. De effectiviteit, de mate waarin praktijkvisitaties tot verandering aanzetten is nooit onderzocht.

Verder zijn veel problemen nog onopgelost: bijvoorbeeld, wat dient getoetst te worden: de praktijk of de huisarts?; zou de visitator zich moeten beperken tot opmerkingen of kan hij/zij ook aanbevelingen doen?; en dient beoordeeld te worden wat de deelnemer bereikt heeft of juist de manier waarop hij bezig is met verbeteringen aan te brengen? Kortom, er blijven nog veel onbeantwoorde vragen over de inhoud en de vorm van de visitatie, over wie visiteert en hoe welke feedback wordt gegeven?

Een valide, betrouwbare, acceptabele, toepasbare en effectieve visitatiemethode voor toetsing van de praktijkvoering met een zuiver educatief doel zou een waardevolle aanwinst zijn voor de huisarts en de evaluatie ervan zou bovengenoemde vragen deels kunnen beantwoorden.

Publicaties over verschillen tussen huisartsen en praktijken op het gebied van de praktijkvoering zijn schaars. Er is weliswaar over bepaalde aspecten zoals delegatie, verslaglegging, werkbelasting en werkdruk onderzoek gedaan, maar deze studies zijn niet meer up-to-date Nieuw en compleet onderzoek naar variatie in praktijkvoering en factoren, die die variatie verklaren is gewenst en belangrijk voor beleidsadviezen aan huisartsen, praktijken en beleidsmakers. Gegevens over variatie zijn met name belangrijk voor de onderbouwing van een toetsingsmethode voor de praktijkvoering, omdat ze een referentiemogelijkheid bieden.

Dit gaf aanleiding tot de volgende vraagstellingen:

Hoe ziet een goede toetsingsmethode voor de praktijkvoering eruit?

- Welke elementen en eigenschappen zijn van belang voor de praktijkvoering van huisartsen en kunnen huisartsen en deskundigen op het gebied van de praktijkvoering overeenstemming bereiken over een systematische, gedetailleerde en praktische beschrijving hiervan?
- Wat is de validiteit, betrouwbaarheid, praktische toepasbaarheid en acceptatie van een toetsingsmethode, die gebaseerd is op deze beschrijving van relevante elementen in de praktijkvoering?

Wat is de variatie in praktijkvoering tussen praktijken en huisartsen en welke factoren kunnen deze variatie verklaren?

In hoeverre resulteert de praktijkvisitatie met de toetsingsmethode in verandering in de praktijkvoering?

- Waarin verschillen enerzijds visitatie en toetsing door een collega in het kader van onderlinge visitatie en anderzijds visitatie en toetsing door een getrainde externe niet-huisarts visitator?

De eerste vraagstelling wordt beantwoord in hoofdstuk 2 en 3, de tweede vraagstelling (over variatie) in de hoofdstukken 4-7 en de derde vraagstelling in hoofdstuk 8.

In *hoofdstuk* 2 werd praktijkvoering gedefinieerd en werd een gebieds- en inhoudsbepaling tot stand gebracht in een consensusprocedure, waaraan 40 huisartsen deelnamen. Hiervan waren 25 huisartsen gespecialiseerd in diverse aspecten van praktijkvoering en 15 namen deel aan een cursus, waarin zij hun eigen praktijkvoering evalueerden aan de hand van de gebiedsbeschrijving.

De beschrijving resulteerde in een checklist, waarin 2410 relevante elementen in hoofd- en subcategorieën ingedeeld en uitgewerkt werden tot het niveau van handelingen, functies, taken en uitrusting (een "Checklist praktijkvoering"). Op basis van een selectie hieruit werd een toetsingsinstrument ontwikkeld alsmede een procedure voor visitatie De selectie betrof indicatoren, waarvan op voorhand verwacht kon worden, dat ze konden discrimineren tussen huisartsen Deze visitatiemethode werd getest door 59 huisartsopleiders, hetgeen hielp voor een verdere selectie van relevante en discriminerende indicatoren voor praktijkvoering De visitatiemethode omvatte een instructie voor het bezoek aan de praktijk en verschillende instrumenten om gegevens te verzamelen bij de huisarts, zijn of haar assistente en bij de patiënten De gegevens werden ingebracht in een voorgestructureerd rapport, dat voorzag in feedback aan de huisarts Factoranalyse bood inzicht in dimensies van de praktijkvoering en waardevolle informatie voor het optimaliseren van gegevensverzameling en aanpassing van de methode

In de evaluatie door de opleiders werd de visitatiemethode als valide beoordeeld en de deelnemers herkenden hun praktijkvoering in de feedback, maar de gebruikersvriendelijkheid liet nog te wensen over Observerende huisartsen vonden het grote aantal administratieve handelingen niet leuk De eerste proeve van een visitatiemethode was veelbelovend, maar behoefde verdere ontwikkeling.

In *hoofdstuk* 3 werd de aangepaste visitatiemethode - de VIP (Visitatie Instrument Praktijkvoering) - getest in een studie bij 110 huisartsen in 88 praktijken om opnieuw discriminerende indicatoren te selecteren op basis van de frequenties

Factor- en betrouwbaarheidsanalyses werden gedaan om bruikbare dimensies van de praktijkvoering te bepalen Van de 249 indicatoren in de VIP bleken er 208 voldoende te discrimineren op praktijk- of op huisartsniveau Factoranalyse resulteerde in 24 dimensies, die in combinatie met de dimensies voor werkbelasting (5) en ervaren werkdruk (5) resulteerden in een taxonomie van de praktijkvoering De scores op de 34 dimensies lieten opvallende variatie zien tussen huisartsen en praktijken Lineaire regressie analyse liet zien dat het mogelijk was met behulp van deze dimensies een onderscheid te maken tussen huisartsen en praktijken met verschillende achtergrondkenmerken Opleidingspraktijken scoorden hoger op zeven dimensies; solo- en apotheekhoudende praktijken scoorden lager op het aantal taken gedelegeerd aan de praktijkassistente, maar hoger op bereikbaarheid en op spreekuurorganisatie/toegankelijkheid

De conclusie was dat de taxonomie en de dimensies van de praktijkvoering in overeenstemming waren met het theoretische raamwerk en met andere classificaties. De resultaten waren bemoedigend en ondersteunden de inhouds- en constructvaliditeit van de VIP. Deelnemers herkenden zich in de verschillende aspecten van de praktijkvoering, waarover feedback werd gegeven. Het bleek mogelijk groepen huisartsen en praktijken met bepaalde achtergrondkenmerken te onderscheiden met de VIP, daarmee haar waarde als toetsingsinstrument aangevend.

In *hoofdstuk* 4 werden de aspecten van de praktijkvoering, die de ruimtelijke voorzieningen, het instrumentarium en de hygiëne betroffen geanalyseerd om bestaande variatie tussen huisartsen en praktijken vast te stellen en verklaringen voor die variatie te zoeken.

Scores van visitaties van 110 huisartsen in 88 praktijken op indicatoren voor ruimtelijke voorzieningen, aanwezigheid of gebruik van instrumentarium en hygiëne werden geanalyseerd. 56 Indicatoren bleken voldoende te discrimineren (<5% >95%).

Factoranalyse liet vier onderscheiden dimensies van de praktijkuitrusting zien: uitrusting van behandel-/onderzoekkamer en laboratorium, hygiëne, gebruik van instrumentarium, diagnostica en therapeutica en inhoud van de dokterstas. Er bleek belangrijke variatie tussen huisarts(praktijk)en onderling op deze indicatoren en dimensies. Solopraktijken scoorden lager en "meer collegae onder een dak", "fulltime werken" en "meer assistentie" hoger op aspecten van de uitrusting. Urbanisatiegraad, aantal patiënten en het gediplomeerd zijn van de assistente verklaarden nauwelijks enige variantie. De dimensie hygiëne bleek nauwelijks te differentiëren tussen verschillende praktijkvormen.

Solohuisartsen scoorden significant lager op het gebruik van instrumentarium, diagnostica en therapeutica, terwijl fulltimers en huisartsopleiders een hogere score hadden dan gemiddeld. Praktijkgrootte en deelname aan de beroepsopleiding verklaarden geen variatie in dimensies van de praktijkuitrusting.

De resultaten zijn in overeenstemming met onderzoek in het Verenigd Koninkrijk, dat praktijken aanzienlijk verschilden in het doen van investeringen in praktijkuitrusting. Solopraktijken daar investeren minder, omdat dit niet financieel gestimuleerd wordt, evenals in Nederland.

Betere richtlijnen voor de praktijkuitrusting - liefst in de vorm van een NHG-standaard - zijn wenselijk.

In *hoofdstuk* 5 werden de aan de praktijkassistente gedelegeerde taken de verschillen tussen praktijken hierin en factoren die de bestaande verschillen kunnen verklaren, onderzocht

De praktijkassistente beantwoordde vragen over indicatoren voor taken die gewoonlijk aan haar werden gedelegeerd In de patientenquête, die deel uitmaakte van de visitatie, werd aan 15 patienten gevraagd naar hun mening over de mate van taakdelegatie en of zij de praktijkassistente als belemmerend ervaren hadden om in contact te komen met hun huisarts 35 Indicatoren in de vragenlijst voor de praktijkassistente discrimineerden voldoende (meer dan 5% gedelegeerd of minder dan 95%) Factoranalyse over deze taken liet vijf aspecten zien medisch-technische taken, taken t a v laboratoriumonderzoek, voorlichtingstaken, medisch-organisatorische taken en administratief-organisatorische taken In apotheekhoudende praktijken, solopraktijken en praktijken op het platteland werden minder taken door de praktijkassistente uitgevoerd in praktijken met een eigen behandelkamer voor de assistente meer Praktijkgrootte en percentage assistentie hingen niet samen met het aantal gedelegeerde taken Patienten waren significant meer tevreden over de delegatie wanneer de assistente gediplomeerd was

Vergelijking met eerder onderzoek in Nederland laat nauwelijks een toename van het aantal taken zien behalve enkele specifieke taken, die door het NHG werden gestimuleerd, zoals diabetes-controles, uitstrijkjes en stikstofbehandeling van wratten Aanbevelingen of richtlijnen voor delegatie van taken aan de praktijkassistente zouden deel kunnen uitmaken van de standaarden van het NHG Het scheppen van mogelijkheden tot het volgen van trainingen en nascholing voor praktijkassistentes wordt aanbevolen

In *hoofdstuk* 6 werden de verschillen tussen huisarts(praktijk)en onderzocht op het gebied van de dienstverlening en organisatie in de huisartspraktijk (uitgezonderd gedelegeerde taken) en factoren die deze verschillen kunnen verklaren

Vragen in een patientenquête voor spreekuurbezoekers, vragen aan de huisarts en vragen aan de visitator werden gebruikt voor de toetsing van deze aspecten Van de 47 indicatoren voor dienstverlening en organisatie bleken er 41 te discrimineren Factoranalyse liet vijf aspecten zien bereikbaarheid spreekuurorganisatie/toegankelijkheid gebruik van voorlichtingsmateriaal, toegankelijkheid van voorlichtingsmateriaal en organisatie van de preventie Er bleek belangrijke variatie tussen huisarts(praktijk)en op deze dimensies De wachttijd voor het consult (gemiddeld 11 minuten) hing niet samen met deze dimensies

Tabel 1 De VIP's, die bijdroegen aan het project (De achternaam is slechts eenmaal vermeld, N>200)

Groep	Namen
Begeleidingscommissie	Richard Grol, Henk van den Hoogen, Wil van den Bosch
Werkgroep "Practice Assessment"	Richard, Henk Mokkink, Hugo Rol, Fred Dijkers, Hans van der Voort, Johannes Dalhuijsen
Commissie PraktijkVoering	Fred, Bob van Heukelom, Klaas van der Els, Johan van Melle, Roy Beijaerdt, Wim Tillema, Gerard Hoogvliet, Elly Weyman, Harrie de Lathouder, Bea Visser
Werkgroep "POP"	Anton Smits, Wiljo Brenninkmeijer, Vic Tielens, André Haverkort, Richard
De pilotstudie	59 opleiders van het Nijmeegs Huisartseninstituut
Het secretariaat	Jolanda van Haren, Agnes de Grunt, Myriam Kassies, Annelies Jacobs
De consulentes	Mieke Lijn, Janine Keegstra, Liesbeth Smit, Ellen Nijhuis, Magriet Straver, Marianne Kalb, Marian ten Klei, Maria Roelofs, Nel Lassooi
De stagiaires	Tanja van Eijck, Angela van Uden, Brigit van de Velden
Het IVES	Jan van Doremalen, Waling Tiersma, Henk
Het panel van de "Checklist"	40 huisartsen en deskundigen op het gebied van de praktijkvoering
Deelnemers voor- en nameting	110 huisartsen in Nederland
Het NHG	Arno Timmermans, Bart Berden, Elly, Ans Stalenhoef, Johannes, Hans
Ontwerp & layout	Ron Eijkman
Correcties	Jolanda, Johan Lummen (Engels)
Gezondheidscentrum "Oost" en "De Molenwiek"	Frans Bollen, Annelies Walter, Jan Veenstra, Koos Bartels, Aga Sunder, Thera Kooij, Marianne Lauwrier, Annemiek de Jong Ben Koopmans, Wim Kernebeek, Ruth Heil
Niet te vergeten	Jan de Haan, Ruud Jacobs, Michel Wensing
Nat, droog & liefde	Riki van der Hurk, Wil Luiten, Maria van den Hombergh, Theo van Winkel, Martien en Hilde Janssen, Jan en Marion Boezeman
Ouders en schoonouders	Maria van den Hombergh Bot, Harrie Geraerdts, Bernard Bruls, Netty Bruls-Schreurs
Mijn gezin	Hanneke Bruls, Huub en Laura

uur per dag aan administratie en telefoontjes, gemiddeld heeft hij iets meer dan één uur dienst en hij overlegt iets meer dan een half uur met andere hulpverleners.

Huisartsen, die de huisartsopleiding gevolgd hadden werkten met meer tevredenheid (plezier, commitment en interesse); huisartsen met praktijk aan huis waren meer tevreden met de beschikbare tijd voor praktijkvoering en ervoeren ook minder werkbelasting. Het ervaren van veel oneigenlijke hulpvragen hing nauwelijks samen met achtergrondkenmerken van huisartsen. Huisartsen met veel direct en indirect patiëntencontact en huisartsen met een grote totale werkbelasting per week waren minder tevreden met de beschikbare tijd voor praktijkvoering. Veel (professionele) vergaderingen (quartaire activiteiten) hing samen met minder ervaren werkbelasting.

Praktijkvorm had geen invloed op de werkbelasting of ervaren werkdruk evenmin als assistentekenmerken. De werkbelasting was lager als de huisarts een praktijk op het platteland, een kleine praktijk, meer particuliere patiënten en/of een praktijk aan huis had. Achtergrondkenmerken verklaarden ongeveer 20% van de variantie in werkbelasting en nog minder van de variantie in ervaren werkdruk. De mate van werkbelasting en werkdruk wordt waarschijnlijk vooral door andere (meer persoonlijke) factoren bepaald. Verder onderzoek naar die factoren wordt aanbevolen.

In ***hoofdstuk*** 8 werden de toepasbaarheid en effecten van de visitatiemethode (VIP) onderzocht. Met name werden twee programma's van toetsing van de praktijkvoering vergeleken: onderlinge visitatie en feedback van collegae versus visitatie en feedback door een getrainde externe niet-huisarts visitator (consulente). De opzet was een gerandomiseerde interventiestudie van visitaties met een follow-up visitatie na een jaar. Negentig huisartsen - 46 onderlinge visitaties en 44 visitaties door consulentes - in 68 praktijken werden in de studie ingesloten; 81 huisartsen konden na een jaar opnieuw worden gevisiteerd. Verschillen in scores tussen de eerste en de tweede visitatie na één jaar op 208 indicatoren en 33 dimensies van de praktijkvoering werden gebruikt om verandering te meten. Om de toepasbaarheid en acceptatie van beide programma's - onderlinge visitatie versus visitatie door consulentes - te evalueren werden vragen over vier aspecten hiervan gesteld: waardering, acceptatie, de mate van verandering aangegeven door de deelnemers en de mate waarin de deelnemers hun praktijkvoering herkenden in de feedback.

Een bezoek door een consulente werd significant beter geaccepteerd, maar beide programma's verschilden weinig in acceptatie en in verandering aangegeven door de huisarts.

Na een jaar was sprake van significante verbeteringen op de meerderheid van praktijkvoeringsaspecten in de VIP De verbeteringen waren opvallend veel sterker na onderlinge visitatie, met name voor instrumentarium hygiene de inhoud van de dokterstas en voor verslaglegging

Dit is waarschijnlijk de eerste studie naar de toepasbaarheid en effectiviteit van educatieve visitaties in de huisartspraktijk Het laat zien dat toetsing van de praktijkvoering in een visitatie kan uitgroeien tot een krachtig instrument voor kwaliteitsverbetering De veranderingen waren meer uitgesproken voor die aspecten waarvan verandering in een jaar haalbaar is zoals instrumentarium delegatie, organisatie van het voorlichtingsmateriaal en verslaglegging Na een jaar bleken de huisartsen ook beter te scoren op schalen van werkbelasting of ervaren werkdruk en dat waren onveranderlijk de belangrijkste onderwerpen in de bespreking van de feedback

Onderlinge visitatie en feedback van een collega' moge dan effectiever zijn gegevensverzameling en het geven van feedback door een consulente wordt beter gewaardeerd Huisartsen hadden een hekel aan gegevensverzameling toch was het juist de visitatie van de collega (met name het scoren van patientenkaarten en het instrumentarium) die waarschijnlijk het meest bijdroeg aan de verbetering van hun eigen praktijkvoering De aantrekkelijkheid van de feedback en het gebruikersgemak van de VIP kunnen verklaren waarom 90% van de huisartsen aangaf een follow-up binnen 2 - 5 jaar te wensen Een andere verklaring voor deze waardering en acceptatie kan zijn dat de VIP zich richt op feitelijke informatie en feedback aan de huisarts De VIP biedt een spiegel aan het beperkt oordelen van de visitator tot een minimum en biedt betrouwbare feedback onafhankelijk van de visitator Tenslotte brengt visitatie in werkelijkheid kosten met zich mee die overigens niet wezenlijk verschillen voor onderlinge visitatie of visitatie door een consulente De kosten bedragen ± f 800 - (bij een uurloon van ± f 100 - voor een huisarts) inclusief materiaal- organisatie- en analysekosten

SLOT

Het onderzoek heeft de levensvatbaarheid aangetoond van visitaties, waarin de praktijkvoering werd getoetst met de methode 'VIP' De methode zal hopelijk verder rijpen en aangepast worden aan de tijd De VIP dient educatieve, screenende en onderzoeksdoeleinden en kan uitgebreid worden met andere aspecten van zorg dan praktijkvoering tot een meeromvattende visitatie In werkelijkheid moeten visitaties concurreren met andere activiteiten op het gebied van kwaliteitsverbetering In de evaluatie mag niet worden vergeten dat als puur vrijwillige activiteit educatieve visitatie zich nooit echt heeft kunnen handhaven als een regelmatige activiteit ten behoeve van kwaliteitsverbetering Visitatie heeft mogelijk meer stimulans, commitment of beloning nodig van de verantwoordelijke beroepsorganisaties Het dient daarom als activiteit (wel/niet participatie) zijn plaats te krijgen in het proces van accreditatie (en mogelijk ooit recertificatie) om haar kwaliteit als krachtig instrument voor kwaliteitsverbetering in de huisartspraktijk waar te maken

DANKWOORD

Dit proefschrift was teamwork veldwerkers, waterdragers, ondergrondse werkers, cheerleaders etc Om niemand te vergeten heb ik m n toevlucht moeten nemen tot een tabel (sic!), maar een aantal mensen wil ik speciaal noemen

Op de eerste plaats wil ik Richard Grol bedanken voor zijn wel heel bijzondere rol Je was geduldig conscientieus, loyaal maar ook streng Je hebt me vooral geleerd kritisch te kijken naar mijn teksten De bijeenkomsten van de begeleidingscommissie (36 keer!) waren prettig en gaven structuur Henk van den Hoogen maakte de analyses inzichtelijk en hield het simpel en Wil van den Bosch leverde behalve als onderzoeker prima commentaar als huisarts

Jolanda van Haren - werkzaam op het secretariaat van de WOK - heeft de promotie met zeker een jaar bespoedigd door haar ongelooflijke inzet en nauwkeurige intelligente commentaar In het begin van het project heeft vooral Agnes de Grunt mij enorm geholpen met de Checklist en de TIP, de voorloper van de VIP

Fred Dijkers was m'n promotiebuddy Als voorzitter van het NHG-congres "Praktijk in uitvoering" in 1989 wist hij mij enthousiast te maken voor praktijkvoering Op het congres kreeg het idee van visitatie meer gestalte in de workshop 'Doorlichting van de praktijk

Bijna alle huisartsen in Nederland, die de praktijkvoering hoog in het vaandel hadden, hebben direct of indirect bijgedragen aan de VIP De werkgroep 'Practice assessment" ("What sort of doctor?' was toen ons voorbeeld), de 40 leden van het panel voor de "Checklist praktijkvoering' en de leden van de CPV (Commissie PraktijkVoering) waren actief in de startfase van het visitatie-project (Zie tabel 1) Johannes Dalhuijsen leverde behalve aan de checklist ook een forse bijdrage aan de eerste VIP Ruud Jacobs en later Jan de Haan dank ik omdat in de vele cursussen die we samen gaven, praktijkmanagement gestalte kreeg

De 59 "Nijmeegse' opleiders, die deelnamen aan de pilotstudie hebben de visitatiemethode in z'n meest onrijpe vorm uitgetest De POP-werkgroep (Project Observatie Praktijkvoering) bestaande uit stafleden van de beroepsopleiding in Nijmegen begeleidde de opleiders bij de verbetering van hun praktijkvoering Voor de hulp in de moeilijke beginfase wil ik Anton Smits, Henk Mokkink, André Haverkort, Wiljo Brenninkmeijer en Vic Tielens bedanken

De 110 huisartsen, die deelnamen aan de hoofdstudie, van Baarlo tot Almere, van Hulst tot Klazienaveen, van Oostkapelle tot Hattem en Doetinchem, van Bakel tot het Gooi

investeerden veel kostbare tijd in de toen nog bewerkelijke VIP Zij hebben de VIP gemaakt

De consulentes, die overal in Nederland gingen visiteren, waren een fantastisch team en zorgden voor vele verbeteringen en aanvullingen Vooral Janine Keegstra, Mieke Lijn en later Maria Roelofs en Marian ten Klei ben ik dankbaar voor hun inzet, de vele aanwijzingen en feedback

De stagiaires Tanja van Eijck, Angela van Uden en Brigit van de Velden leverden een uitstekende bijdrage aan het onderzoek Tanja splitste de VIP in praktijk- en huisartsniveau en zorgde weer voor swung in het project Angela en Brigit verrichtten nuttige deelanalyses

Jan van Doremalen zorgde voor de data, de kolossale berg cijfers en variabelen dreef hem nooit tot wanhoop Michel Wensing was een ideale kamergenoot, die veel vragen wist te beantwoorden

De huisartsen en assistentes in gezondheidscentrum Oost wil ik bedanken voor de steun, tolerantie en flexibiliteit, die onmisbaar zijn bij een promotie Zij hebben meegeexperimenteerd in de visitatie en hun vriendschap was een hele steun Ook m'n vroegere collegae en assistente uit de Molenwiek wil ik noemen om hun eigen kijk op praktijkvoering en om hun loyaliteit

Mijn moeder heeft me het goede voorbeeld gegeven Zij worstelde ook met rubriceren, bijvoorbeeld de vraag of 'koe' nu onder 'boderij' of 'dierenrijk' moest worden gerangschikt

Tenslotte komt het moeilijkste deel van het dankwoord De dank aan degenen die m'n aandacht afhielden van het proefschrift Ondanks hen kwam het proefschrift, die rare mengeling van werk en hobby, tot stand Huub en Laura griffelden als Richard nog meer gecorrigeerd had in mijn tekst dan hun leraar in hun werkstukken Han had moeite m'n obsessie te begrijpen, maar de grote V's bleven goed overeind Ik kijk met genoegen op de 7 jaar terug

van dienstverlening en organisatie, evenmin als het aantal patienten dat aangaf dat hun huisarts gestoord werd tijdens het consult Deze aspecten bleken onafhankelijke indicatoren Zelfstandig werkende huisartsen en praktijken met een kleinere waarneemgroep waren meer toegankelijk en plattelandspraktijken meer bereikbaar Praktijken met 100% of meer assistentie per huisarts scoorden op alle vijf aspecten van dienstverlening en organisatie hoger Zelfstandig werkende huisartsen lieten hun patienten korter wachten maar gebruikten ook minder vaak voorlichtingsmateriaal in het consult Organisatie van de preventie scoorde hoger bij opleidingspraktijken en lager bij apotheekhoudende praktijken en praktijken aan huis Praktijkgrootte en het gevolgd hebben van de huisartsopleiding verklaarden weinig verschillen

Patienten leverden bruikbare informatie over aspecten van de dienstverlening Het was echter moeilijk voldoende discriminerende indicatoren voor deze aspecten te vinden hetgeen op een goede dienstverlening kan wijzen en op weinig variatie tussen huisarts(praktijk)en Praktijken met meer huisartsen hadden patienten die minder tevreden waren over de service, behalve over het gebruik van voorlichtingsmateriaal Deze bevindingen zijn in overeenstemming met onderzoek in het Verenigd Koninkrijk dat een daling van de tevredenheid van de patient liet zien als de praktijkgrootte toenam Het gebrek aan richtlijnen op het gebied van service en organisatie is een belemmering voor de toetsing van dienstverlening en organisatie in de huisartspraktijk en betreft ook de toetsing van de organisatie van de preventie

In ***hoofdstuk*** 7 werden de verschillen tussen huisartsen onderzocht in werkbelasting en ervaren werkdruk, factoren, die deze verschillen kunnen verklaren en de relatie tussen werkbelasting en ervaren werkdruk Van de 110 deelnemende huisartsen in 88 praktijken werkten 76 huisartsen fulltime Wij vroegen de huisartsen te rapporteren over 4 aspecten van werkbelasting en 5 verschillende aspecten van ervaren werkdruk Voor de ervaren werkdruk werden schalen gebruikt uit het NIVEL-onderzoek naar burnout

De totale werkbelasting per week voor fulltime werkende huisartsen was gemiddeld 53 uur en 50 uur wanneer men de 3 uur besteed aan facultatieve taken niet meerekent (bevallingen, keuringen, controles, etc) Dit is gemiddeld 4 uur meer dan de huisartsen aangaven te willen werken Van de fulltime werkende huisartsen werkte 75% meer dan 48 uur en een kwart meer dan 58 uur per week Per week werden 33 uren (7 uur per dag) besteed aan direct patientencontact Gemiddeld besteedt de huisarts iets minder dan één

CURRICULUM VITAE

Pieter van den Hombergh werd op 15 augustus 1950 geboren in Venray. Na het Gymnasium op het "IC Lyceum voor jongens" te Venray ging hij Geneeskunde studeren in Nijmegen. Hij deed als keuzestage onderzoek naar kunstorganen aan Brown University in Providence RI. Ook was hij een half jaar medewerker van de PAAZ in ZH Overvecht in Utrecht. Het artsexamen in 1977 werd voorafgegaan door een stage in Sengerema Hospital in Tanzania. De keuze voor de tropen stond daarna vast. Na het huisartsenjaar (groep 77-III, de linkse groep) in Nijmegen volgden stages in chirurgie (St Elisabeth ZH in Arnhem) en Gynaecologie (het Radboud ZH in Nijmegen) en de tropencursus op het KIT. De jaren 1980-84 in St Joseph's Hospital in Kilgoris waren een idylle met Hanneke, Huub, die een jaar oud was en Laura, die in 1981 daar geboren werd. De realiteit van school dreef hen terug naar Nederland. In Almere-Buiten, dat toen slechts op papier bestond, zocht men een arts om het gezondheidscentrum "de Molenwiek" te starten. Dat was een leuke uitdaging, maar al gauw kwamen de eerste nevenfuncties. In 1985 was hij enige jaren medewerker van het project 1e-2e lijn aan de VU o.l.v. Prof J. van Es. Toen volgden de jaren bij het NHG, eerst als secretaris van de congrescommissie (Praktijk in Uitvoering, 1989) en later maakte hij de start van de afdeling deskundigheidsbevordering mee. Van 1988-91 was hij ook eerste en laatste voorzitter van de PHV Almere, die daarna in een RHV overging. In die tijd veranderde hij van gezondheidscentrum en werd de vijfde huisarts in gezondheidscentrum "Oost".

Als lid en later voorzitter van de CPV groeide de ambitie om een bijdrage te leveren aan de ondersteuning van huisartsen in hun praktijkvoering. Hij werkte mee aan de 'Bouwstenen der praktijkvoering' en schreef de 'Checklist praktijkvoering'. Richard zag de potentie van de 'Checklist' voor toetsing en lijfde Pieter in bij de WOK, waar dit proefschrift tot stand kwam.

Hij geeft daarnaast al 10 jaar "Hospital management" aan de tropencursus voor artsen van het KIT alsook cursussen 'praktijkvoering' aan huisartsen overal in het land en sinds kort ook aan Roemeense huisartsen.

Sinds januari 1998 is hij weer staflid van het NHG om de visitatie te implementeren en nieuwe initiatieven te ontplooien op het gebied van educatieve toetsing van de praktijkvoering.

STELLINGEN

BEHOREND BIJ HET PROEFSCHRIFT

"PRACTICE VISITS"

VAN PIETER VAN DEN HOMBERGH

NIJMEGEN 22 JUNI 1998

1 Het bleek mogelijk een valide betrouwbare acceptabele en betaalbare visitatiemethode voor toetsing van de praktijkvoering van huisarts(-praktijk)en te maken (*dit proefschrift*)

2 De onderlinge visitatie door huisartsen resulteert in meer verandering van de praktijkvoering dan de visitatie door een consulente maar wordt minder goed gewaardeerd (*dit proefschrift*)

3 Huisarts zijn op het platteland met veel particuliere patienten praktijk aan huis en een grote waarneemgroep hangt samen met een lage werkbelasting en ervaren werkdruk (*dit proefschrift*)

4 Praktijkvoering omvat zowel de organisatie van de praktijk als het management van de praktijk De organisatie dient gemeten te worden op praktijkniveau en het management op huisartsniveau

5 De stelling They don t change what you expect they change what you inspect wordt ook in onze studie bevestigd

6 De VIP inventariseert zwakke en sterke punten in de praktijkvoering Dit is slechts een begin want de kwaliteitscirkel moet dan nog doorlopen worden om de vruchten van de visitatie te plukken

7 Wanneer visitatie naast een educatief doel tevens beoogt ondermaatse huisartsen te kunnen identificeren dan is van visitatie geen succes te verwachten

8 De matige motivatie of tegenzin van veel huisartsen bij het ter hand nemen van preventietaken wordt meer bepaald door de zwakke praktijkorganisatie dan door medisch inhoudelijke argumenten (*Proefschrift van* M Hulscher 1998)

9 Te grote werkbelasting van de huisarts heeft tot gevolg dat er onvoldoende tijd is voor reflectie, nodig voor goede praktijkvoering

10 Een abces wordt vaak gediagnosticeerd als een infiltraat, omdat de arts opziet tegen de consequentie "incisie'

11 Het antrum en duodenum vormen in rechter zijligging een zwanenhals Dit zou kunnen verklaren waarom mensen met dyspeptische klachten vaker aangaven vooral in die houding te slapen

12 Shampoo wordt onvoldoende onderkend als predisponerende factor voor otitis externa

13 In de geestelijke gezondheidszorg bestaat onvoldoende belangstelling voor onderzoek naar de effectiviteit van een kort consult vergelijkbaar met het huisartsconsult

14 Een deel van de huisartsopleiding zou plaats moeten vinden na 10 - 20 jaar praktijkervaring gebaseerd op een analyse van sterke en zwakke punten van de geleverde zorg

15 Het gymnasium is een atavisme, dat herleefde dankzij goede herinneringen van ouders aan intellectueel uitdagend onderwijs De kans op modern en leuk onderwijs met een breed scala aan vakken werd hierdoor gemist

16 Huidongerechtigheden, die om cosmetische redenen worden verwijderd, behoeven geen pathologisch anatomische diagnostiek (BMJ 1997, 315 25-27)

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